

**Year Book**  
**OF**  
**THE NATIONAL ASSOCIATION OF**  
**COTTON MANUFACTURERS**  
**WITH**  
**COTTON MANUFACTURERS**  
**Manual**  
**1924**

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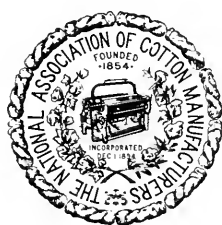






ROBERT AMORY  
President, 1922-24

**Year Book**  
of  
**THE NATIONAL ASSOCIATION OF  
COTTON MANUFACTURERS**  
with  
**COTTON MANUFACTURERS**  
**Manual**  
**1924**



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THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS

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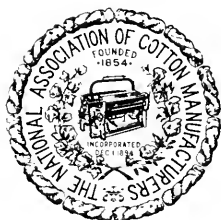
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# Year Book

of

## THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS

1924







## FOREWORD

---

The Year Book of The National Association of Cotton Manufacturers has become an institution. This is the second year that it has been entirely compiled in the Office of the Association. There can be no question of its usefulness to any cotton manufacturer. We realize that it can be improved, but only through the efforts of our members, from whom we expect all possible constructive criticism. It is to be hoped that each member will take pains to read the book carefully and write his ideas to the Secretary on how to make next year's book even better and more useful.

ROBERT AMORY,  
*President.*

## PREFACE

---

This edition of "The Year Book of The National Association of Cotton Manufacturers with Cotton Manufacturers Manual" is a further development of the experience of the past few years.

Primarily intended for the use of our members, it has attained a wide circulation throughout the world, and has become a recognized standard authority.

The increase in the facilities of the Association for handling statistical and technical information has made it possible to justify the position generally accorded the book. Although it is compiled entirely in the Secretary's office, the information is obtained from widely scattered authoritative sources.

Our interest in the preparation of this book is twofold. It is always in process and never complete. There is always the possibility that new and valuable information may be found. Development and discovery are the hope of mankind and the inspiration of all business.

In this spirit this book is prepared, and with this ideal future issues will be concerned.

H. C. MESERVE,  
*Secretary.*

# CHARTER

---

No. 6091

## Commonwealth of Massachusetts

BE IT KNOWN that whereas, EDWARD W. THOMAS, C. J. H. WOODBURY, WILLIAM J. KENT, F. M. MESSENGER, HARRY T. WHITIN, ARTHUR H. LOWE, ALBERT F. KNIGHT, ALFRED M. GOODALE, FRED C. McDUFFIE and GEORGE W. BEAN have associated themselves with the intention of forming a corporation under the name of the NEW ENGLAND COTTON MANUFACTURERS' ASSOCIATION, for the purpose of encouraging scientific investigation and experiment as to the methods of manufacturing cotton; collecting and imparting information relating to this industry; promoting social intercourse among its members; and establishing and maintaining a library of works on textiles in the city of Boston, and have complied with the provisions of the Statutes of this Commonwealth in such case made and provided, as appears from the certificate of the President, Treasurer and Directors of said corporation, duly approved by the Commissioner of Corporations, and recorded in this office.

Now, Therefore, I, WILLIAM M. OLIN, Secretary of the Commonwealth of Massachusetts, do hereby certify that said EDWARD W. THOMAS, C. J. H. WOODBURY, WILLIAM J. KENT, F. M. MESSENGER, HARRY T. WHITIN, ARTHUR H. LOWE, ALBERT F. KNIGHT, ALFRED M. GOODALE, FRED C. McDUFFIE and GEORGE W. BEAN, their associates and successors, are legally organized and established as and are hereby made an existing corporation under the name of the

NEW ENGLAND COTTON MANUFACTURERS' ASSOCIATION,

with the powers, rights and privileges, and subject to the limitations, duties and restrictions which by law appertain thereto.

*Seal of the Commonwealth of Massachusetts* Witness my official signature hereunto subscribed, and the seal of the Commonwealth of Massachusetts hereunto affixed this first day of December, in the year of our Lord one thousand eight hundred and ninety-four.

WILLIAM M. OLIN,

*Secretary of the Commonwealth.*

## Commonwealth of Massachusetts

(Acts of 1895, Chap. 163.)

AN ACT TO AUTHORIZE THE NEW ENGLAND COTTON MANUFACTURERS' ASSOCIATION TO HOLD ITS MEETINGS WITHOUT THE COMMONWEALTH.

*Be it enacted, etc., as follows:*

SECTION 1. The New England Cotton Manufacturers' Association is hereby authorized to hold its meetings in any state or territory of the United States and in the District of Columbia; provided, however, that its annual meeting shall be held in this Commonwealth at least once in five years.

SECTION 2. This act shall take effect upon its passage. [Approved March 23, 1895.]

---

No. 252

## Commonwealth of Massachusetts

BE IT KNOWN that whereas

NEW ENGLAND COTTON MANUFACTURERS' ASSOCIATION

a corporation organized under the laws of this Commonwealth and subject to the provisions of chapter one hundred and twenty-five of the Revised Laws has complied with the provisions of chapter one hundred and nine of the Revised Laws, as appears from the certified copy of the order of the Commissioner of Corporations, authorizing said corporation to change its name and adopt the name of

THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS, and the certificate of the Vice President and Acting President, Treasurer and Directors of said corporation duly filed in this office pursuant to the provisions of section ten of the aforesaid chapter one hundred and nine of the Revised Laws.

NOW, THEREFORE, I, William M. Olin, Secretary of the Commonwealth of Massachusetts, DO HEREBY CERTIFY, that the name which said corporation shall bear is

THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS, which shall hereafter be its legal name.

*Seal of the Commonwealth of Massachusetts* WITNESS my official signature hereunto subscribed, and the Great Seal of the Commonwealth of Massachusetts hereunto affixed this twenty-fifth day of June in the year of our Lord one thousand nine hundred and six.

WM. M. OLIN,  
*Secretary of the Commonwealth.*

# THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS

SUCCESSOR TO  
NEW ENGLAND COTTON MANUFACTURERS' ASSOCIATION

FOUNDED 1854  
INCORPORATED DECEMBER 1, 1894

---

## CONSTITUTION AND BY-LAWS

(Revised, November 1, 1923)

---

### I

#### NAME

The name is THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS.

### II

#### QUALIFICATIONS OF MEMBERS

##### *Active Members*

1. Any person who is actively engaged as President, Treasurer, Agent, Superintendent, or Manager in the manufacture, printing, or finishing of cottons shall be eligible for active membership.

##### *Associate Members*

2. Any person engaged in the manufacture of cotton or cotton fabrics, or the manufacture of textile machinery, or industries kindred to the cotton manufacture, shall be eligible for associate membership.

3. This class of membership shall be entitled to attend the meetings of the Association and participate in its proceedings without the right to vote except by permission from the Board of Government or by vote of the Association.

##### *Sustaining Members*

4. Any firm or corporation actively engaged in manufacturing, bleaching, printing, or finishing of cotton, or any firm or corporation actively engaged in a business contributory to the cotton manufacturing industry, shall be eligible for sustaining membership.

5. The executive head of a firm or corporation, so elected, or any duly authorized representative thereof, shall represent its sustaining membership in the Association.

6. Sustaining members shall enjoy the full privilege of active membership and in addition shall be entitled to such direct service as the Association may be able to render by its technical and statistical or other departments under such regulations as the Board of Government may prescribe.

#### *Honorary Members*

7. Honorary members shall be recommended by the Board of Government and may be elected at any duly called meeting of the Association. They shall be entitled to attend the meetings of the Association and participate in its proceedings without the right to vote. No person actively engaged in cotton manufacture shall be eligible to such membership.

#### *Life Members*

8. Any active or associate member by the single payment of a sum equal to ten times the amount of his annual dues, shall be exempt from all future payment of dues and shall become a life member and shall have all the privileges to which his class of membership is entitled.

9. The minimum dues for a life member shall be one hundred dollars.

10. All moneys thus paid shall be invested as a permanent fund by the Treasurer, acting under the direction of the Board of Government, of which the income only shall be subject to appropriation for current expenses.

#### *Technical Members*

11. Any person over twenty-five years of age (except those designated under Article II, Sections 1 and 2) engaged in the manufacture, bleaching, printing, finishing, or distribution of cotton products; or in any industry contributory to cotton manufacture, including the manufacture and installation of cotton machinery; or who is employed in a school or college giving instruction in the manufacture of cotton goods and accessory industries; or by a technical laboratory or textile engineering organization, shall be eligible to technical membership.

#### *Junior Technical Members*

12. Any junior or senior student of a school or college giving instruction in textile manufacture, or any employee, under twenty-five years of age and not a textile school graduate, engaged in the supervision of cotton manufacture, bleaching, printing, or finishing, shall be eligible as a junior technical member. A student junior technical member upon graduation, and an employee junior technical member upon attaining his twenty-fifth birthday, shall automatically become a technical member of the Association and

shall be subject to the same conditions and receive the same privileges as other technical members.

13. It shall be the duty of all members of the Association to make returns to the Secretary of such statistics as may be called for by him, under the direction of any committee duly appointed for the collection of statistics, when not incompatible with private interests.

### III

#### OFFICERS

1. The officers shall be a President, two Vice Presidents, fifteen Directors, a Treasurer, and a Secretary.

2. The PRESIDENT, and in his absence a VICE PRESIDENT, shall preside at all meetings of the Association and of the Board of Government.

3. The TREASURER, or a deputy whom he may appoint with the approval of the Board of Government, shall collect all moneys due the Association and disburse the same in accordance with the action of the Board of Government. He shall keep an accurate account of all receipts and expenditures and present a full account of the finances of the Association at the annual meeting in each year, or whenever called for by the Board of Government. He shall act as trustee of the permanent funds of the Association.

4. The SECRETARY shall attend all meetings of the Association and the Board of Government and keep accurate records of their doings. In the absence of the Secretary at any meeting, a Secretary pro tem may be appointed by the presiding officer, who shall be sworn to do all things, while in office, required of the Secretary.

5. Any officer who shall unreasonably absent himself from three consecutive meetings of the Board of Government of which he is a member, or shall otherwise neglect or refuse to perform the duties of his office, may be removed from office at any regular meeting of the Board of Government by a vote of a majority of the members present and voting thereon, a notice of such proposed action to be sent to him by mail at least one week previous to the meeting.

### IV

#### BOARD OF GOVERNMENT

1. The President, Vice Presidents, and Directors, in addition to the Presidents who have held office during six years previous to the annual meeting of any year, shall constitute a BOARD OF GOVERNMENT and have under its care and direction all matters pertaining to the management of the Association.

2. Meetings of the Board may be called by the President at such time and place as he may deem expedient, giving each member a written or printed notice of the same at least five days before the day of the meeting.

3. At the first meeting of the Board after the Annual Meeting, a Treasurer, a Secretary, and an Auditor of Accounts for the year

ensuing shall be elected. The Board shall also fix the amount of the compensation of the Secretary at this meeting.

4. All vacancies in the Board, occasioned by death, resignation, or removal, shall be filled by the Board; and the persons so elected shall hold their offices until the next Annual Meeting, except as provided in Article III, Section 5.

5. At the first meeting of the Board, or as soon after as practical, the President, with its approval, shall appoint from its membership an Executive Committee of seven, which shall exercise authority in such matters as may be delegated to it by the Board. The President shall be Chairman of this Committee.

6. The President shall appoint from the general membership of the Association such other committees as in his judgment can most effectively serve its needs and interests. All committees so appointed shall report their conclusions, whenever the particular matter dealt with involves the policy of the Association or the expenditure of money, to the Board of Government.

7. The Auditor shall examine the accounts of the Treasurer annually, and report at the annual meeting his findings.

8. No committee or member thereof shall make public any matter in connection with the work of the Association without the approval of the Board of Government.

9. Seven members shall constitute a quorum for the transaction of business.

## V

### MEETINGS

1. The Annual Meeting of the Association shall be held the last Wednesday in October, or at such other time and at such hour and place as the Board of Government shall appoint.

2. The Board of Government shall arrange for a Semi-Annual Meeting of the Association to be held in April or at such other time and at such hour and place as the Board of Government shall appoint.

3. Special meetings shall be called by the Board of Government whenever it deems it expedient or upon written application of any fifty members to the Secretary.

4. All meetings of the members of the Association shall be in pursuance of a written or printed notice, addressed to each member, with the name of the President, or Secretary, attached thereto, and deposited in the Post Office ten days at least before the day of meeting, specifying the time and place of meeting; and at all such meetings twenty-five members shall constitute a quorum for the transaction of business.

## VI

### ELECTIONS

1. At each Annual Meeting there shall be chosen by ballot, a President, a first Vice President, a second Vice President, and five Directors; the President and Vice Presidents to serve one year and

the five Directors for terms of three years unless sooner removed, as hereinbefore provided.

2. No Director, elected as such, who has to his credit six years of consecutive service, shall be eligible for re-election until one year after the completion of such service.

3. The officers shall hold their respective offices until their successors shall be chosen and accept their positions.

## VII

### ELECTION OF MEMBERS

All nominations for membership of any class in the Association shall be made in writing and presented to the Board of Government for action thereon. Upon favorable action by the Board of Government the nominee shall become a member upon the payment, within thirty days, of the initiation fee and dues of his class.

## VIII

### ENTRANCE FEES, DUES AND ASSESSMENTS

1. The admission fee for active members shall be ten dollars and the payment of annual dues not exceeding ten dollars.

2. The admission fee for associate members shall be twenty-five dollars and the annual assessment shall be double the sum annually voted for active members.

3. The annual assessment for sustaining members shall be at the rate of twenty-five cents for each one thousand dollars of yearly payroll paid by such firm or corporation during the previous year in all its departments actively engaged in the manufacture of cotton goods or in contributory industries; provided that no annual assessment shall be less than fifty or more than five hundred dollars. There shall be no initiation fee for sustaining members.

4. Honorary members shall not be subject to payment of admission fees or assessments.

5. The admission fee for technical members shall be ten dollars and the annual dues five dollars.

6. Junior technical members shall pay no admission fee and the annual dues shall be three dollars.

7. Dues in the active, associate, technical, and junior technical membership classes shall be paid in advance on the first day of January of each year. The annual assessment for sustaining members is payable in advance upon the anniversary of such membership.

8. Any member failing to pay two successive assessments shall cease to be a member at the end of six months from the date when such second assessment shall become due.



## IX

## RESIGNATIONS

Any member may withdraw from the Association upon payment of all arrearages, first giving notice of his intention to do so, in writing, to the Secretary, and the Board of Government may accept such resignation.

## X

## SUSPENSION OR EXPULSION

Any member may be suspended or expelled for cause at any duly called meeting of the Board of Government by a two-thirds vote of the members present, provided he has been notified of the charges against him and an opportunity given him to appear in his defense.

## XI

## NATIONAL COUNCIL OF AMERICAN COTTON MANUFACTURERS

1. The Board of Government may co-operate with the American Cotton Manufacturers' Association in matters of national scope and importance through the National Council of American Cotton Manufacturers (composed of representatives of The American Cotton Manufacturers' Association and an equal number from this Association) in such manner and to such an extent as it may from time to time determine to be for the best interests of the cotton manufacturing industry, and may delegate to the Council authority to act for this Association on such matters of national importance as may be mutually agreed upon by the Boards of Government of the constituent associations.

2. The representatives of this Association in the National Council shall be the seven following: The President of the Association (ex-officio), the last three living past presidents (ex-officiis), and three others elected by the Board of Government from the sustaining membership of the Association. At the first election under this article, the Board of Government shall elect representatives to serve one, two, and three years, respectively. Thereafter one representative shall be elected each year to serve a term of three years.

3. The Board of Government, from the moneys received as dues from sustaining members, may contribute to the National Council for the support of its work at such times and in such manner as may be deemed necessary or desirable by a majority of the Board of Government.

## XII

## AMENDMENTS

Amendments to the Constitution and By-Laws may be made at any duly called meeting of the Association by a two-thirds vote; provided, notice of such proposed amendment be given in writing at a previous meeting, and also notice be given to each member by the Secretary, of the pendency of such amendment, ten days at least before any such meeting.

## BOARD OF GOVERNMENT

### 1923

#### PRESIDENT

ROBERT AMORY . . . . . BOSTON, MASS.

#### VICE PRESIDENTS

NATHAN DUFEE . . . . . FALL RIVER, MASS.

JOHN SKINNER . . . . . NORTHAMPTON, MASS.

#### DIRECTORS

##### *Term expires 1924*

J. ARTHUR ATWOOD . . . . . PROVIDENCE, R. I.

MORGAN BUTLER . . . . . BOSTON, MASS.

A. W. DIMICK . . . . . PROVIDENCE, R. I.

B. H. BRISTOW DRAPER . . . . . HOPEDALE, MASS.

CHARLES M. HOLMES . . . . . NEW BEDFORD, MASS.

##### *Term expires 1925*

ALFRED E. COLBY . . . . . BOSTON, MASS.

PHILIP DANA . . . . . WESTBROOK, ME.

LEWIS DEXTER<sup>1</sup> . . . . . ANDOVER, N. H.

JOHN A. PERKINS . . . . . COHOES, N. Y.

JAMES THOMSON . . . . . NEW BEDFORD, MASS.

##### *Term expires 1926*

ARTHUR R. DICKINSON . . . . . CLINTON, MASS.

R. H. I. GODDARD . . . . . PROVIDENCE, R. I.

RUSSELL H. LEONARD . . . . . BOSTON, MASS.

JOHN A. SWEETSER . . . . . BOSTON, MASS.

ANDREW S. WEBB . . . . . PHILADELPHIA, PA.

#### FORMER PRESIDENTS EX-OFFICIO

ALBERT FARWELL BEMIS . . . . . BOSTON, MASS.

W. FRANK SHOVE . . . . . FALL RIVER, MASS.

RUSSELL B. LOWE . . . . . FITCHBURG, MASS.

#### TREASURER

W. IRVING BULLARD . . . . . BOSTON, MASS.

#### SECRETARY

HARRY C. MESERVE . . . . . BOSTON, MASS.

<sup>1</sup> Died in office August 19, 1923. C. F. Broughton elected to vacancy.

# BOARD OF GOVERNMENT

## 1924

## PRESIDENT

ROBERT AMORY . . . . . BOSTON, MASS.

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W. FRANK SHOVE . . . . . FALL RIVER, MASS.

RUSSELL B. LOWE . . . . . FITCHBURG, MASS.

## TREASURER

W. IRVING BULLARD . . . . . BOSTON, MASS.

## SECRETARY

HARRY C. MESERVE . . . . . BOSTON, MASS.

## OFFICERS OF THE ASSOCIATION

## FROM THE FIRST ORGANIZATION

## PRESIDENTS

EZEKIEL A. STRAW .	1865-78	FREDERICK E. CLARKE	1899-99
AMOS D. LOCKWOOD .	1878-80	DAVID M. THOMPSON .	1900-01
JOHN KILBURN .	1880-83	CHARLES H. FISH .	1901-03
WILLIAM C. LOVERING .	1883-85	HERBERT E. WALMSLEY	1903-05
RICHARD GARSED .	1885-86	JAMES R. MACCOLL .	1905-07
JOSEPH S. LUDLAM .	1886-88	WM. D. HARTSHORNE .	1907-08
HENRY F. LIPPITT .	1888-89	CHARLES T. PLUNKETT	1908-10
WALTER E. PARKER .	1889-92	FRANKLIN W. HOBBS .	1910-12
ROBERT MCARTHUR .	1892-94	EDWIN F. GREENE .	1912-14
EDWARD W. THOMAS .	1894-95	ALBERT G. DUNCAN .	1914-16
ALFRED M. GOODALE .	1895-96	ALBERT FARWELL BEMIS	1916-18
ARTHUR H. LOWE .	1896-97	W. FRANK SHOVE .	1918-20
RUSSELL W. EATON .	1897-98	RUSSELL B. LOWE .	1920-22
STEPHEN A. KNIGHT .	1898-99	ROBERT AMORY .	1922-

## VICE PRESIDENTS

WILLIAM A. BURKE .	1865-73	HERBERT E. WALMSLEY	1901-03
AMOS D. LOCKWOOD .	1865-77	ALFRED E. ADAMS .	1902-03
JOHN C. PALFREY .	1873-76	JAMES R. MACCOLL .	1903-05
EDWARD ATKINSON .	1876-78	WM. D. HARTSHORNE .	1903-07
A. G. CUMNOCK .	1877-80	GEORGE A. AYER .	1905-07
CHARLES NOURSE .	1878-81	CHARLES T. PLUNKETT	1907-08
WILLIAM F. GOULDING .	1880-83	GEORGE OTIS DRAPER .	1907-11
RICHARD GARSED .	1881-85	FRANKLIN W. HOBBS .	1908-10
JOSEPH S. LUDLAM .	1883-86	EDWIN F. GREENE .	1910-12
WALTER E. PARKER .	1885-89	FREDERICK A. FLATHER	1911-13
RICHARD B. BORDEN .	1886-88	GEORGE P. GRANT, Jr.	1912-14
ARNOLD B. SANFORD .	1888-91	ALBERT G. DUNCAN .	1913-14
ROBERT MCARTHUR .	1889-92	WILLIAM M. BUTLER .	1914-16
SIMEON B. CHASE .	1891-93	GROSVENOR ELY .	1914-16
EDWARD W. THOMAS .	1892-94	W. FRANK SHOVE .	1916-18
ALFRED M. GOODALE .	1893-95	RUSSELL B. LOWE .	1916-20
WILLIAM J. KENT .	1894-97	JAMES THOMSON .	1918-22
FRED C. McDUFFIE .	1895-00	ROBERT AMORY .	1920-22
HENRY T. WHITIN .	1897-00	NATHAN DURFEE .	1922-
CHAS. H. RICHARDSON .	1900-01	JOHN SKINNER .	1922-
GEORGE H. HILLS .	1900-02		

## DIRECTORS

DANIEL D. CROMBIE .	1865-68	RUSSELL W. EATON .	1896-97
JONES S. DAVIS .	1865-69	GEORGE H. HILLS .	1897-00
WILLIAM P. HAINES .	1865-69	CHAS. H. RICHARDSON .	1897-00
PHINEAS ADAMS .	1865-74	JOHN T. MEATS .	1898-01
THOMAS J. BORDEN .	1865-78	GEORGE F. WHITTEN .	1898-04
CHARLES NOURSE .	1865-78	ALFRED E. ADAMS .	1899-02
A. M. WADE .	1868-69	A. TENNY WHITE .	1899-02
DAVID J. JOHNSTON .	1869-70	CHARLES H. FISH .	1900-01
FREDERICK E. CLARKE .	1869-75	HERBERT E. WALMSLEY .	1900-01
A. G. CUMNOCK .	1869-77	WM. D. HARTSHORNE .	1901-03
JOHN KILBURN .	1870-80	JAMES R. MACCOLL .	1901-03
WILLIAM P. HAINES .	1874-78	W. B. SMITH WHALEY .	1901-04
CYRUS I. BARKER .	1875-80	JAMES R. MONTGOMERY .	1902-05
HERVEY KENT .	1877-81	WM. D. PENNELL .	1902-05
WALTER PAINE, 3d .	1878-80	PHILIP A. MATHEWSON .	1903-06
DAVID J. JOHNSTON .	1878-82	GEORGE P. GRANT, Jr. .	1903-12
CHAS. L. LOVERING .	1878-83	GEORGE A. AYER .	1904-05
RICHARD Garsed .	1880-81	C. P. BROOKS .	1904-07
WILLIAM H. JENNINGS .	1880-83	CHARLES T. PLUNKETT .	1905-07
JOHN W. DANIELSON .	1881-85	ROSCOE S. MILLIKEN .	1905-08
WALTER E. PARKER .	1881-85	WILLIAM H. LOFTUS .	1905-10
WILLIAM E. BARROWS .	1882-83	GEORGE OTIS DRAPER .	1906-07
CHAS. D. McDUFFIE .	1883-83	FRANKLIN W. HOBBS .	1906-08
RICHARD B. BORDEN .	1883-86	HENRY F. MANSFIELD .	1906-10
RUFUS A. MAXFIELD .	1883-86	ROBERT BEATTY .	1906-11
GEORGE W. WEEKS .	1883-86	EDWIN F. GREENE .	1907-10
HENRY S. HOWE .	1883-87	JOHN W. KNOWLES .	1907-10
HENRY F. LIPPITT .	1885-88	FREDERICK A. FLATHER .	1907-11
O. S. BROWN .	1885-91	JOSEPH MERRIAM .	1908-11
WILBUR A. STILES .	1886-88	DAVID S. JOHNSTON .	1908-12
ROBERT MCARTHUR .	1886-89	FREDERICK B. MACY .	1910-14
STEPHEN N. BOURNE .	1886-91	ALBERT FARWELL BEMIS .	1910-16
S. S. SPENCER .	1887-90	RUSSELL B. LOWE .	1910-16
EDWARD W. THOMAS .	1888-92	R. M. MILLER, Jr. .	1910-17
WILLIAM W. WHITIN .	1888-93	WILLIAM AMORY .	1911-14
ROBERT R. SMITH .	1889-92	W. FRANK SHOVE .	1911-16
ALFRED M. GOODALE .	1890-93	WILLIAM N. KIMBALL .	1911-17
HERMAN F. STRAW .	1891-93	ALBERT G. DUNCAN .	1912-13
WILLIAM J. KENT .	1891-94	WILLIAM M. BUTLER .	1912-14
FRED C. McDUFFIE .	1892-95	GROSVENOR ELY .	1913-14
GEORGE W. BEAN .	1892-95	WILLIAM A. MITCHELL .	1914-17
FRANK M. MESSENGER .	1893-95	ALEXANDER MAKEPEACE .	1914-18
ALBERT F. KNIGHT .	1893-99	JOHN SULLIVAN .	1914-18
ARTHUR H. LOWE .	1894-96	PHILIP DANA .	1914-20
HENRY T. WHITIN .	1894-97	HERBERT LYMAN .	1916-19
HERBERT L. PRATT .	1895-98	P. Y. DeNORMANDIE .	1916-19
STEPHEN A. KNIGHT .	1895-98	JOHN E. ROUSMANIERE .	1916-22
JOHN ECCLES .	1895-99	WILLIAM B. MACCOLL .	1917-18

THOMAS H. RENNIE . . . . .	1917-19	NATHAN DURFEE . . . . .	1920-22
CHARLES L. GILLILAND . . . . .	1917-20	SAMUEL STEWART . . . . .	1920-23
ALBERT BLUM . . . . .	1918-20	E. KENT SWIFT . . . . .	1920-23
FREDERICK L. JENCKES . . . . .	1918-21	ALLEN F. JOHNSON . . . . .	1921-22
JOHN SKINNER . . . . .	1918-22	ALFRED E. COLBY . . . . .	1922-
J. ARTHUR ATWOOD . . . . .	1918-	PHILIP DANA . . . . .	1922-
CHARLES B. CHASE . . . . .	1918-23	B. H. BRISTOW DRAPER . . . . .	1922-
LEWIS DEXTER . . . . .	1918-23	JOHN A. PERKINS . . . . .	1922-
GROSVENOR ELY . . . . .	1918-23	JAMES THOMSON . . . . .	1922-
CHARLES M. HOLMES . . . . .	1918-	ARTHUR R. DICKINSON . . . . .	1923-
WILLIAM L. LYALL . . . . .	1918-23	R. H. I. GODDARD . . . . .	1923-
JOHN E. McLOUGHLIN . . . . .	1919-22	RUSSELL H. LEONARD . . . . .	1923-
MORGAN BUTLER . . . . .	1919-	JOHN A. SWEETSER . . . . .	1923-
A. W. DIMICK . . . . .	1919-	ANDREW S. WEBB . . . . .	1923-

## AUDITORS

BENJAMIN SAUNDERS . . . . .	1865-71	C. E. ROBERTS . . . . .	1900-16
JOHN C. PALFREY . . . . .	1871-73	BOYDEN & STEACIE . . . . .	1916-19
HENRY D. SULLIVAN . . . . .	1873-82	F. W. LAFRENTZ & Co. . . . .	1919-
J. HERBERT SAWYER . . . . .	1882-00		

## SECRETARY AND TREASURER

AMBROSE EASTMAN . . . . .	1865-94	C. J. H. WOODBURY . . . . .	1894-15
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## SECRETARY

## TREASURER

C. J. H. WOODBURY . . . . .	1915-16	CHARLES H. FISH . . . . .	1915-16
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## SECRETARY AND TREASURER

CHARLES H. FISH, 1916-17

## SECRETARY

## TREASURER

RUFUS R. WILSON . . . . .	1917-21	HERBERT LYMAN . . . . .	1917-18
HARRY C. MESERVE . . . . .	1921-	W. IRVING BULLARD . . . . .	1918-

## ALPHABETICAL LIST OF MEMBERS

HONORARY, LIFE, ACTIVE, ASSOCIATE, TECHNICAL,  
AND SUSTAINING,

## ALSO SUSTAINING REPRESENTATIVES

H. — Honorary	As. — Associate
L. — Life	T. — Technical
Ac. — Active	S. — Sustaining
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White, Nelson D., Ac.	52	Wood, John P., Ac.	52
White, Capt. Wm. P., As.	59	Wood, Kenneth F., Ac.	53
White, W. W., As.	59	Wood, Theodore, Ac.	53
Whitin, Arthur F., Ac.	52	Woodbury, W. Sanford, Ac.	53
Whitin, Henry T., Ac.	52	Woodman, Cyrus, Ac.	53
Whitin, James Earl, Ac.	52	Woodrow, Marcus J., Ac.	53
Whitin Machine Works, S.	82	Woolley, Erving Y., As.	59
Whitin, Paul, Ac.	52	Woolley, Frank F., Ac.	53
Whitin, Paul, Mfg. Co., S.	82	Worsnop, William, Ac.	53
Whitman, C., & Son, Inc., S.	82	Wylde, Harry, Ac.	53
Whitman, C. Morton, S.R.	82		
Whitman, Harold C., Ac.	52	York Manufacturing Co., S.	82
Whitman, Hendricks H., Ac.	52	Young, Alan V., Ac.	53
Whitman, Malcolm D., As.	59	Young, A. McLean, S.R.	81
Whitman Mills, S.	82	Young, Charles William, Ac.	53
Whitman, William, Ac.	52		
Whittaker, John G., Ac.	52		
Whittier, Stephen T., Ac.	52	Zuill, Robert W., S.R.	78

## MEMBERS OF THE ASSOCIATION

JUNE 6, 1924

Members of the Association are earnestly requested to advise the Secretary, P. O. Box 5224, Boston, Mass., of change in address or any error in the following lists.

A number of members have rejoined the Association after severing their first membership. The date of their first election is given.

## HONORARY MEMBERS

A. LAWRENCE LOWELL, LL.D.	President Harvard University 19 Quincy St., Cambridge, Mass.	Apr. 30, 1909
HENRY SMITH PRITCHETT, LL.D.	The Carnegie Foundation 522 Fifth Ave., New York City	Sept. 26, 1901
EDWARD C. STOKES	Trenton, N. J.	Sept. 21, 1905
JOHN WINGATE WEEKS	2100 16th St., Washington, D. C.	Apr. 13, 1911

LIFE MEMBERS<sup>1</sup>

John Ormsbee Ames	Goddard Brothers 50 So. Main St., Providence, R. I.	Sept. 21, 1900
Albert Farwell Bemis	Pres. Bemis Bro. Bag Co. 40 Central St., Boston, Mass.	Sept. 21, 1905 Apr. 23, 1903
Wm. L. Clayton	Anderson, Clayton & Co. Houston, Tex.	Apr. 13, 1911 June 1, 1923
Daniel J. Danker	73 Dean Rd., Brookline, Mass.	June 1, 1923 Apr. 28, 1904
B. H. Bristow Draper	Treas. Draper Corporation Hopedale, Mass.	Apr. 25, 1907 Apr. 24, 1913
Frank S. Field	Asst. Treas. Massaemet Yarn Mills Shattuckville, Mass.	May 7, 1913 Oct. 25, 1895
Charles H. Fish	Gen. Mgr. Imperial Cotton Mills Co. 1850 No. Main St., Los Angeles, Calif.	Apr. 27, 1916 Apr. 28, 1904
Frederick A. Flather	Treas. Boott Mills 79 Milk St., Boston, Mass.	Apr. 29, 1891 Apr. 17, 1908
Frederick Flather	Executives' Technical Assistant, Boott Mills Lowell, Mass.	May 1, 1924 May 1, 1924
John Rogers Flather	Executives' Assistant, Boott Mills Lowell, Mass.	May 1, 1924 May 1, 1924
Salvado R. Gama	Mgr. Machado, Gama & Co. P. O. Box 143, Rio de Janeiro, Brazil	Apr. 27, 1916 Apr. 26, 1917
Harold C. Hansen	Boston Transcript 324 Washington St., Boston, Mass.	Sept. 23, 1909 Sept. 23, 1910
William D. Hartshorne	40 Pleasant St., Methuen, Mass.	Apr. 27, 1899 Apr. 26, 1906
M. Graeme Haughton	Haughton & Co. 20 Central St., Boston, Mass.	Apr. 29, 1915 May 15, 1916
Franklin W. Hobbs	Pres. Arlington Mills 78 Chauncy St., Boston, Mass.	Apr. 27, 1899 Apr. 18, 1917
John H. Holt	Treas. Luther Mfg. Co. P. O. Box 57, Fall River, Mass.	Apr. 23, 1903 Feb. 25, 1920

<sup>1</sup> The first date is that of the original election to the Association, and the second date that of life membership.

James R. MacColl . . .	Pres. Lorraine Mfg. Co. . . . .	{ Apr. 24, 1895
	Pawtucket, R. I. . . . .	{ Sept. 21, 1905
John P. Marston . . .	247 Atlantic Ave., Boston, Mass. . . . .	{ Apr. 28, 1904
		{ Apr. 25, 1907
John R. Mitchell . . .	Pres. & Treas. Mitchell-Bissell Co. , . . . .	{ Oct. 18, 1900
	334 Fourth Ave., New York City . . . . .	{ Apr. 27, 1905
Nathaniel M. Mitchell . . .	Supt. Hill Mfg. Co. . . . .	{ Mar. 2, 1922
	Canal St., Lewiston, Me. . . . .	{ Mar. 2, 1922
W. F. Moore . . . . .	Treas. Hill Mfg. Co. . . . .	{ Mar. 2, 1922
	30 State St., Boston, Mass. . . . .	{ Mar. 2, 1922
E. N. Murti . . . . .	Tanuku . . . . .	{ Apr. 25, 1912
	Kristna Dist., Pres'y Madras, India . . . . .	{ Apr. 25, 1912
Robert W. Neff . . . . .	22 India Sq., Boston, Mass. . . . .	{ Apr. 24, 1902
		{ Apr. 28, 1904
E. K. Nelson . . . . .	Pres. Ridley Park National Bank . . . . .	{ May 3, 1918
	Ridley Park, Philadelphia, Pa. . . . .	{ June 15, 1918
Charles J. O'Malley . . .	Pres. O'Malley Advertising & Selling Co. . . . .	{ Apr. 24, 1913
	244 Washington St., Boston, Mass. . . . .	{ Sept. 7, 1913
Walter E. Parker . . . . .	Agent Emeritus, Pacific Mills . . . . .	{ Apr. 25, 1877
	217 Haverhill St., Lawrence, Mass. . . . .	{ Apr. 27, 1905
William H. Ritter . . . . .	Asst. Sec. Chicopee Mfg. Corp. . . . .	{ May 3, 1918
	New Brunswick, N. J. . . . .	{ June 15, 1918
George I. Rockwood . . .	Rockwood Sprinkler Co. . . . .	{ Apr. 25, 1901
	38-56 Harlow St., Worcester, Mass. . . . .	{ Apr. 25, 1901
Frank G. Rowley . . . . .	Treas. Seakonk Lace Co. . . . .	{ Oct. 20, 1917
	260 Central Ave., Pawtucket, R. I. . . . .	{ Nov. 20, 1917
Robert Schaellibaum . . .	303 No. Church St., Charlotte, N. C. . . . .	{ Sept. 22, 1904
		{ Sept. 22, 1904
Frederick E. Wagg . . . . .	Agt. Hill Mfg. Co. . . . .	{ Mar. 2, 1922
	487 Main St., Lewiston, Me. . . . .	{ Mar. 2, 1922
Alexander S. West . . . . .	U. S. Gutta Percha Paint Co. . . . .	{ Apr. 17, 1908
	12 Dudley St., Providence, R. I. . . . .	{ Apr. 17, 1915
Wharton Whitaker . . . . .	V. P. & Gen. Mgr. William H. Haskell Mfg. Co., Pawtucket, R. I. . . . .	{ Mar. 15, 1919
		{ Mar. 19, 1920

## ACTIVE MEMBERS

		Elected
James H. Abercrombie	"Rutland" Dorking Rd., Reigate, Surrey, Eng.	Apr. 25, 1907
Alexander E. Adam	Mgr. Canadian Cottons, Ltd. 429 James St., Hamilton, Ontario, Can.	Apr. 30, 1909
George B. Adams	Treas. Adams Brothers Mfg. Co. Adams, Mass.	Apr. 30, 1909
Henry Shaw Adams	Sec.-Treas. The Springstein Mills, P. O. Box 442, Chester, S. C.	Oct. 4, 1907
Robert J. Adams	Pres. Adams Mfg. Co. 31-33 East 32d St., New York City.	Oct. 19, 1923
Joseph D. Aiken	Asst. Agt. Ponemah Mills, Taftville, Conn.	Oct. 28, 1891
Charles T. Aldrich	Treas. Aldrich Brothers Co. P. O. Box 1134, Providence, R. I.	Apr. 28, 1886
Bradley C. Algeo	Philadelphia Textile School 320 So. Broad St., Philadelphia, Pa.	Sept. 21, 1905
G. Bion Allen	Managing Director J. & P. Coats (R. I.), Inc. 117 Mulberry St., Pawtucket, R. I.	Apr. 27, 1905
John T. Almy	Treas. Attawaugan Co., Norwich, Conn.	Apr. 28, 1910
William D. Anderson	Pres. Bibb Mfg. Co., Macon, Ga.	Apr. 29, 1915
Joshua D. Armitage	Taylor, Armitage & Eagles, Inc. 120 Broadway, New York City.	Apr. 26, 1906
E. H. Arnold	Asst. Treas. Greylock Mills North Adams, Mass.	May 4, 1920
E. W. Atkinson	Atkinson, Haserick & Co. 152 Congress St., Boston, Mass.	Oct. 27, 1886
J. Arthur Atwood	Treas. Ponemah Mills 930 Hospital Trust Bldg., Providence, R. I.	Oct. 28, 1891
Louis A. Aumann	Agt. Dwight Mfg. Co., Chicopee, Mass.	Apr. 25, 1907
Frederick Ayer	Pres. Suffolk & Tremont Mills 14 Milk St., Boston, Mass.	May 1, 1924
George A. Ayer	3 Morgan Ter., New Bedford, Mass.	Apr. 24, 1895
Nathaniel F. Ayer	Treas. Nyanza Mills 77 Franklin St., Boston, Mass.	Apr. 25, 1901
Howard Baetjer	Pres. Mt. Vernon-Woodberry Mills 506 Continental Bldg., Baltimore, Md.	May 3, 1918
Harry L. Bailey	Wellington, Sears & Co. 93 Franklin St., Boston, Mass.	Oct. 2, 1913
Joseph W. Bailey	Gen. Mgr. Butler Mill, New Bedford, Mass.	Apr. 23, 1903
Edwin H. Baker	West, Baker & Co. 45 East 17th St., New York City.	Apr. 24, 1878
Walter C. Ballard	Treas. Katama Mills 78 Chauncy St., Boston, Mass.	Oct. 20, 1917
Roland H. Ballou	Vice Pres. Connecticut Mills Co. 736 Hospital Trust Bldg., Providence, R. I.	Sept. 16, 1916
John Bancroft, Jr.	Sales Mgr. Joseph Bancroft Sons Co. 320 Broadway, New York City.	Aug. 3, 1921
John F. Bannon	Pres. Mansfield Bleachery Barrowsville, Mass.	May 3, 1918
Harold C. Barnefield	Treas. Waypoysset Mfg. Co. 709 Broad St., Central Falls, R. I.	Apr. 26, 1906
Elliott H. Barnwell	Pres. Barnwell & Co. 313 Ohio Bldg., Akron, Ohio.	May 3, 1918
William L. Barrell	Treas. Lawrence Duck Co., Lawrence, Mass.	Apr. 28, 1910
Allan Barrows	420 Acushnet Ave., New Bedford, Mass.	July 15, 1922
Edwin N. Bartlett	Pres. The Edwin Bartlett Co. North Oxford, Mass.	Apr. 29, 1891
Nelson A. Batchelder	Empire Cotton Mills, Ltd. Welland, Ontario, Can.	Sept. 30, 1914

		Elected
Daniel Moore Bates	Vice Pres. Day & Zimmermann, Inc. 1600 Walnut St., Philadelphia, Pa.	Apr. 27, 1898
Walter C. Baylies	Amory, Browne & Co. 48 Franklin St., Boston, Mass.	Oct. 20, 1917
Frank A. Bean	Asst. Agt. American Mfg. Co. Victory Mills, Victory Mills, N. Y.	Apr. 6, 1923
John R. Beatty	Pres. Robert Beatty Co. Coral & Adams Sts., Philadelphia, Pa.	Sept. 16, 1916
Herbert G. Beede	Pres. Fort Dummer Mills, Pawtucket, R. I.	May 4, 1920
Harry D. Belland	Supt. Dominion Textile Co., Ltd. Dominion Cottons Branch, Kings Pk., Verdun, Quebec, Can.	Mar. 7, 1924
E. B. Benjamin	Treas. E. V. Benjamin Co. Maginnis Cotton Mills, New Orleans, La.	May 20, 1919
Henry Newhall Berry	Richmond Lace Wks. 85 Devonshire St., Boston, Mass.	Apr. 30, 1914
Robert Bishop	Robert Bishop Mfg. Co. 157 W. Sixth St., So. Boston, Mass.	Apr. 26, 1906
Charles R. Blake	19 Harrison St., Taunton, Mass.	Sept. 21, 1905
F. S. Blanchard	Asst. to Treas. Pacific Mills 24 Federal St., Boston, Mass.	Oct. 5, 1920
Richard Boardman	Supt. Barnard Mfg. Co. P. O. Box 748, Fall River, Mass.	Sept. 11, 1912
Joseph W. Booth	Treas. The George E. Kunhardt Corp. Lawrence, Mass.	Apr. 25, 1907
Bertram H. Borden	Pres. American Printing Co. P. O. Box 1194, City Hall Sta., New York City.	May 3, 1918
Charles N. Borden	Treas. Richard Borden Mfg. Co. Fall River, Mass.	Apr. 25, 1907
Jefferson Borden, Jr.	Fall River Bleachery, Fall River, Mass.	May 3, 1918
Spencer Borden, Jr.	Pres. & Treas. Fall River Bleachery P. O. Box 1, Fall River, Mass.	Apr. 27, 1916
Sydney H. Borden	Treas. Durfee Mills, Fall River, Mass.	Sept. 16, 1916
Elmer L. Bowen	Agt. Appleton Co., Lowell, Mass.	Oct. 29, 1918
Laurence R. Bowler	Asst. to Treas. Butler Mill 77 Franklin St., Boston, Mass.	June 1, 1923
George A. Boyd	Asst. Treas. Harmony Mills 201 Devonshire St., Boston, Mass.	Mar. 3, 1920
John Schofield Boyd	John S. Boyd Co. Water St., Williamstown, Mass.	Sept. 23, 1909
William V. Boyd	Mgr. Canadian Cottons, Ltd. Cornwall, Ontario, Can.	Apr. 26, 1906
Thomas Bradbury	Supt. Wamsutta Mills New Bedford, Mass.	May 3, 1918
Walter H. Bradley	Treas. Pepperell Mfg. Co. 141 Milk St., Boston, Mass.	Apr. 28, 1910
Frank A. Brady	Supt. Stevens Mfg. Co. 914 Rock St., Fall River, Mass.	Oct. 20, 1917
Frank L. Branson	Gen. Mgr. B. B. & R. Knight, Inc. R. I. Hospital Trust Bldg., Providence, R. I.	Apr. 5, 1921
S. Parker Bremer	Parker, Wilder & Co. 4 Winthrop Sq., Boston, Mass.	Oct. 2, 1902
Joseph H. Brierley	Supt. John H. Meyer & Co., Inc. Lewis & Ashland Sts., Frankford, Phila- delphia, Pa.	Sept. 21, 1905
George T. Briggs	Pres. & Gen. Mgr. The Briggs Mfg. Co. Voluntown, Conn.	Apr. 24, 1902
Donald J. Brightman	Asst. to Mgr. The Ninigret Co. 32 Central Ave., Pawtucket, R. I.	June 1, 1923
James T. Broadbent	V. P. & Gen. Mgr., Standard Textile Products Co., 320 Broadway, New York City	Apr. 28, 1904

		Elected
Ernest Bromley . . .	Agt. Waypoyset Mfg. Co. . . . . P. O. Box 427, Pawtucket, R. I.	Apr. 28, 1910
Joseph H. Bromley . . .	Pres. Quaker Lace Co., Philadelphia, Pa.	Sept. 21, 1905
C. F. Broughton . . .	Treas. Wamsutta Mills, New Bedford, Mass.	Oct. 20, 1917
Charles N. Brown . . .	Pres. & Treas. The Lincoln Cotton Mill Co. Evansville, Ind.	Oct. 29, 1918
Henry R. Brown . . .	Supt. Hope Co., Phenix Mills . . . . P. O. Box 56, Phenix, R. I.	Apr. 28, 1897
Isaac A. Brown . . .	Treas. Narragansett Mills . . . . P. O. Box 842, Fall River, Mass.	Sept. 29, 1898
Charles Edw. Buckley . .	Supt. Gosnold Mills Co. . . . . 24 Jenny Lind St., New Bedford, Mass.	Apr. 26, 1917
William H. Buckley . . .	Mfg. Agt. The Baltic Mills Co., Baltic, Conn.	Apr. 30, 1909
Frederick R. Budlong . .	Supt. Coventry Co., Anthony, R. I.	Apr. 24, 1923
W. Irving Bullard . . .	Vice Pres. The Merchants National Bank . 28 State St., Boston, Mass.	Sept. 11, 1912
Robert Burgess . . .	90 Summer St., Newton Centre, Mass.	Apr. 27, 1892
Edward N. Burke . . .	216 Nesmith St., Lowell, Mass.	Apr. 28, 1880
James A. Burke . . .	Agt. Lyman Mills . . . . . 74 Front St., Holyoke, Mass.	Oct. 29, 1918
Alfred H. Burnham . . .	P. O. Box 202, Station F, Baltimore, Md.	Apr. 26, 1900
Hervey Burnham . . .	P. O. Box 148, Suncook, N. H.	Apr. 27, 1899
Alfred Burns . . .	Asst. Supt. West Boylston Mfg. Co. . . 151 Pleasant St., Easthampton, Mass.	Oct. 29, 1918
John L. Burton . . .	Agt. Nashawena Mills, New Bedford, Mass.	Apr. 23, 1903
Josiah Butler . . .	Treas. Shaw Stocking Co., Lowell, Mass.	Sept. 7, 1923
Morgan Butler . . .	Treas. Butler Mill . . . . . 77 Franklin St., Boston, Mass.	Apr. 30, 1914
Obadiah Butler . . .	Connecticut Mills Co., Danielson, Conn.	Apr. 13, 1906
William M. Butler . . .	Pres. Butler Mill . . . . . 77 Franklin St., Boston, Mass.	Apr. 28, 1910
Samuel T. Butterworth . .	Agt. The Lawton Mills Corp. . . . . Plainfield, Conn.	Sept. 21, 1905
G. Edward Buxton, Jr. . .	Vice Pres. Consolidated Textile Corp. . 715 Hospital Trust Bldg., Providence, R. I.	Apr. 24, 1923
William H. Cadwell . . .	Agt. Nashua Mfg. Co., Jackson Mills . . Nashua, N. H.	Apr. 26, 1900
Fuller E. Callaway . . .	Pres. Manchester Cotton Mills . . . . La Grange, Ga.	Sept. 11, 1915
Chester W. Carpenter . .	Agt. John Farnum Co., Lancaster, Pa.	May 1, 1924
Frank L. Carpenter . . .	Treas. Davis Mills, Fall River, Mass.	May 3, 1918
Lewis M. Carpenter . . .	Agt. Ashland Cotton Co., Jewett City, Conn.	Apr. 7, 1919
Francis J. Cartledge . . .	Supt. Ipswich Mills, Ipswich, Mass.	Nov. 10, 1922
Arnold B. Chace . . .	Treas. Valley Falls Co., Albion, R. I.	Apr. 26, 1906
Benjamin C. Chace . . .	Gen. Mgr. Crown Mfg. Co., Pawtucket, R. I.	Sept. 21, 1905
G. W. Chambers . . .	Director Binny & Co. (Madras), Ltd. 7 Armenian St., Madras, India . . . .	June 6, 1924
Gerald Chapman . . .	Supt. Woodstock Cotton Mills . . . . Anniston, Ala.	Nov. 3, 1919
Robert Chapman . . .	Pres. Cherew Cotton Mills, Inc., Cherew, S. C.	Apr. 13, 1911
Charles B. Chase . . .	Gen. Mgr. Stevens Mfg. Co. . . . . P. O. Box 45, Fall River, Mass.	Apr. 17, 1908
Simeon B. Chase . . .	Treas. King Philip Mills, Fall River, Mass.	Apr. 21, 1875
Elmer G. Childs . . .	Agt. Boston Duck Co., Bondsville, Mass.	Oct. 26, 1892
Avery B. Clark . . .	Supt. Merrimack Mfg. Co., Lowell, Mass.	Apr. 27, 1905
William Clark . . .	Agt. American Thread Co. . . . . William Clark Mills, Westerly, R. I.	Sept. 21, 1905
Alfred Clement . . .	Supt. Dominion Textile Co., Ltd. . . . 1788 Notre Dame St., E., Montreal, Quebec, Can.	Mar. 7, 1924
Wallace B. Coates, Jr. . .	Agt. Farwell Bleachery, North Andover, Mass.	May 3, 1918

		Elected
W. C. Cobb	Supt. Ware Shoals Mfg. Co. Ware Shoals, S. C.	Apr. 26, 1906
James E. Coburn	Agt. Androscoggin Mills, Lewiston, Me.	Oct. 4, 1907
Langdon Coffin	Purchasing Agt. Samson Cordage Wks. 144 Bellevue Ave., Newton, Mass.	Sept. 29, 1911
John W. Coggeshall	Tillotson Humidifier Co. 78 Fountain St., Providence, R. I.	Apr. 30, 1909
Alfred E. Colby	Asst. Treas. Pacific Mills 24 Federal St., Boston, Mass.	Apr. 6, 1922
Charles E. Collins	Supt. Methuen Co., Methuen, Mass.	Apr. 17, 1890
M. W. Colquhoun	Sec. Pepperell Mfg. Co. 141 Milk St., Boston, Mass.	Aug. 3, 1921
Edward T. Comer	Bibb Mfg. Co., Macon, Ga.	Apr. 29, 1915
Morris L. Comey	West Boylston Mfg. Co. Hampton Ter., Northampton, Mass.	Apr. 28, 1910
Frank B. Comins	Gen. Mgr. American Moistening Co. 251 Causeway St., Boston, Mass.	Oct. 28, 1891
Albion C. Cook	Treas. Wampanoag Mills, Fall River, Mass.	Nov. 10, 1922
Edward H. Cook	Treas. Quisset Mill, New Bedford, Mass.	Apr. 28, 1910
G. Arthur Cook	Treas. West Boylston Mfg. Co. 265 Main St., Easthampton, Mass.	Apr. 25, 1907
Fred A. Cooley	Supt. Atlantic Mills 112 Warrington St., Providence, R. I.	Apr. 30, 1909
Peter H. Corr	Treas. Greenwich Bleachery, Taunton, Mass.	Apr. 24, 1895
Archibald W. Couper	Agt. Paul Whitin Mfg. Co. Rockdale Mills, Northbridge, Mass.	Oct. 29, 1918
Thomas D. Covell	Pres. The Covell & Osborne Co. Fall River, Mass.	Apr. 26, 1906
Richard Cowell	Agt. Greylock Mills 33 Southworth Ave., Williamstown, Mass.	Apr. 24, 1902
Stuart W. Cramer	Pres. Cramerton Mills, Inc., Cramerton, N. C.	Apr. 26, 1906
Lucius B. Cranska	Pres. Cranska Thread Co., Moosup, Conn.	Sept. 21, 1905
T. Frank Cuddy	Supt. Empire Cotton Mills, Ltd. Welland, Ontario, Can.	Oct. 18, 1917
John Cumnock	Supt. Altavista Cotton Mills, Altavista, Va.	Apr. 30, 1914
Geo. C. Cunningham	Treas. Indian Head Mills of Alabama 48 Franklin St., Boston, Mass.	Apr. 6, 1922
Andrew J. Currier	66 Broad St., Valley Falls, R. I.	Apr. 25, 1888
Harry P. Curtis	Managing Director, Curtis & Garratt, Ltd. 81 Mosley St., Manchester, Eng.	Oct. 5, 1920
Luther Dana	Supt. Dana Warp Mills 55 Stroudwater St., Westbrook, Me.	Apr. 30, 1914
Philip Dana	Pres. Dana Warp Mills 79 Mechanic St., Westbrook, Me.	Sept. 29, 1898
F. G. Daniels	Gen. Mgr. Dominion Textile Co., Ltd. 10 Victoria Sq., Montreal, Quebec, Can.	Apr. 17, 1908
Arthur O. Dawson	Vice Pres. Canadian Cottons, Ltd. 28 Victoria Sq., Montreal, Quebec, Can.	Oct. 4, 1907
Morgan G. Day	Asst. Agt. Indian Orchard Co. Indian Orchard, Mass.	May 3, 1921
Milton O. Dean	Agt. Edwards Mfg. Co., Augusta, Me.	Dec. 1, 1921
George De Forest	Pres. Utica Steam & Mohawk Valley Cotton Mills, Utica, N. Y.	Oct. 28, 1897
P. Y. DeNormandie	Treas. Androscoggin Mills 72 Franklin St., Boston, Mass.	Apr. 29, 1896
Nicholas E. Devereux	Pres. The Skenandoa Cotton Co. Utica, N. Y.	Apr. 28, 1910
Henry C. Dexter	Pres. Warwick Lace Works Central Falls, R. I.	Apr. 25, 1901
Arthur R. Dickinson	Agt. Lancaster Mills, Clinton, Mass.	May 4, 1920
John J. Dincen	Supt. La Tosca Yarn Mill, McLoughlin Textile Corp., Utica, N. Y.	Apr. 30, 1914



Elected

H. C. Dodd	Treas. Thomas Henry & Sons, Inc. P. O. Box 4720, Sta. E, Philadelphia, Pa.	Oct. 5, 1922
Joseph Dolphin	Mgr. Canadian Cottons, Ltd. Marysville, New Brunswick, Can.	May 3, 1918
Thomas E. Donelan	Gen. Mgr. Greenwich Bleachery So. Main St., E. Greenwich, R. I.	Feb. 2, 1922
Howard N. Doughty	Asst. Treas. Ipswich Mills 160 State St., Boston, Mass.	Nov. 10, 1922
Daniel E. Douty	Gen. Mgr. U. S. Testing Co., Inc. 340 Hudson St., New York City.	Oct. 2, 1913
Robert Dow	Treas. Solway Dyeing & Textile Co. Pawtucket, R. I.	Apr. 25, 1901
Arthur J. Draper	Pres. Iccormorlee Cotton Mills, Monroe, N. C.	Apr. 23, 1903
Henry C. Dresser	Agt. Beaver Mills, North Adams, Mass.	Apr. 27, 1905
Harry S. Duckworth	Gen. Mgr. Cranston Print Wks. Co. Cranston, R. I.	Apr. 17, 1908
Frederic C. Dumaine	Treas. Amoskeag Mfg. Co. P. O. Box 5228, Boston, Mass.	Apr. 25, 1901
Albert Greene Duncan	Treas. Harmony Mills 201 Devonshire St., Boston, Mass.	Apr. 28, 1910
F. Lincoln Dunlap	Supt. Wampanoag Mills 69 Alden St., Fall River, Mass.	Feb. 2, 1923
Nathan Durfee	Asst. Treas. American Printing Co. Fall River, Mass.	Apr. 27, 1916
Frank J. Dutcher	Pres. Draper Corp., Hopedale, Mass.	Apr. 24, 1902
Charles H. Eames	Pres. Lowell Textile School, Lowell, Mass.	Apr. 25, 1907
Frederic W. Easton	Pres. Waypoysset Mfg. Co. 180 Weeden St., Pawtucket, R. I.	Apr. 25, 1910
Benjamin Eastwood	Sec. Benjamin Eastwood Co. 300 Straight St., Paterson, N. J.	Apr. 13, 1911
Jesse P. Eddy	Treas. Tillinghast, Stiles Co. P. O. Box, 1522 Providence, R. I.	Sept. 21, 1905
John D. Eddy	Supt. Weetamoe Mills 190 Winter St., Fall River, Mass.	Apr. 27, 1916
Robert J. Edwards	Pres. Bates Mfg. Co. 60 Congress St., Boston, Mass.	Apr. 24, 1913
Oscar Elsas	Pres. Fulton Bag & Cotton Mills P. O. Box 1726, Atlanta, Ga.	Apr. 28, 1897
Frederick W. Ely	Agt. Columbian Mfg. Co., Greenville, N. H.	Apr. 25, 1888
Grosvenor Ely	Treas. Ashland Cotton Co., Norwich, Conn.	Sept. 30, 1908
Arthur L. Emery	Agt. Wamsutta Mills P. O. Box 917, New Bedford, Mass.	Apr. 5, 1921
William A. Erwin	Treas. Erwin Cotton Mills West Durham, N. C.	Sept. 29, 1911
Elmer B. Estes	Vice Pres. Estes Mills, Fall River, Mass.	May 3, 1918
George H. Estes	Supt. Continental Mills 196 Bates St., Lewiston, Me.	May 5, 1922
Henry C. Everett, Jr.	Treas. Winnsboro Mills 24 Federal St., Boston, Mass.	Sept. 15, 1916
Francis W. Fabyan	Treas. Columbian Mfg. Co. 72 Franklin St., Boston, Mass.	Sept. 29, 1911
J. P. Farnsworth	Pres. Providence Dye, Bleach. & Col. Co. 52 Valley St., Providence, R. I.	Mar. 4, 1920
James E. Farrell	Supt. American Cotton Fabric Corp. Passaic, N. J.	June 6, 1924
Vernon C. Faunce	Agt. Warren Cotton Mills, W. Warren, Mass.	Apr. 17, 1918
Alfred L. Ferguson	Vice Pres. Consolidated Textile Corp. 88 Worth St., New York City.	Oct. 4, 1907
James T. Ferguson	Agt. Warwick Mills, Centerville, R. I.	Oct. 5, 1899
William Ferrier, Jr.	Supt., Griswoldville Mfg. Co. 52 J St., Turners Falls, Mass.	Apr. 6, 1922

		Elected
Benjamin Fessenden	Rumford Textile Co., Phillipsdale, R. I.	Apr. 28, 1910
Frank H. Filley	Vice Pres. American Mfg. Co. Noble and West Sts., Brooklyn, N. Y.	Sept. 30, 1914
Andrew Fisher	102 Pearl St., Boston, Mass.	Apr. 28, 1910
Eugene N. Foss	Pres. B. F. Sturtevant Co., Hyde Park, Mass.	Apr. 25, 1907
C. S. Fowler	Pres. The Westerly Textile Co. Westerly, R. I.	June 29, 1920
Edward W. France	Director Philadelphia Textile School Broad and Pine Sts., Philadelphia, Pa.	Sept. 22, 1896
Arthur C. Freeman	Vice Pres. H. W. Butterworth & Sons Co. 1212 Turks Head Bldg., Providence, R. I.	Apr. 27, 1899
Victor E. Freeman	Pres. Freeman-Sumner Co. 432 Fourth Ave., New York City.	Sept. 17, 1910
Frank R. Fritz	Nashua Mfg. Co. 48 Franklin St., Boston, Mass.	Oct. 16, 1919
Walter B. Gallant	Agt. Newmarket Mfg. Co., Newmarket, N. H.	Feb. 2, 1922
W. Arthur Gallup	Treas. Arnold Print Wks., North Adams, Mass.	Apr. 30, 1909
Arnold C. Gardner	Treas. Manomet Mills, 1 Clinton Pl. New Bedford, Mass.	Apr. 26, 1906
William B. Gardner	Treas. Nashawena Mills, New Bedford, Mass.	Sept. 23, 1909
James Garvin	Supt. Harmony Mills, Cohoes, N. Y.	Oct. 20, 1917
E. Stanley Gary	Pres. Gary Mfg. Co. 204-206 American Bldg., Baltimore, Md.	Oct. 1, 1903
E. Payson Gibbs	Supt. Pepperell Mfg. Co., Biddeford, Me.	Sept. 23, 1909
Charles L. Gilliland	Treas. Aberfoyle Mfg. Co. 1530 Bankers Trust Bldg., Philadelphia, Pa.	Oct. 2, 1913
Edward T. Gilman	363 Bridge St., Lowell, Mass.	May 5, 1922
George L. Gilmore	K. M. Gilmore & Co., Somerville, Mass.	Apr. 29, 1916
Gustavus W. Gladwin	Gladwin, Redmond & Co., Inc. 72 Leonard St., New York City.	May 3, 1918
Thomas F. Glennon	Agt. Quissett Mill, New Bedford, Mass.	Apr. 28, 1910
Vladimir F. Gniessin	Blythewood, S. C.	Oct. 1, 1903
William C. Godfrey	Treas. and Agt. Indian Orchard Co. Indian Orchard, Mass.	Oct. 29, 1890
Albert H. Goff	The Textile-Finishing Machinery Co. Providence, R. I.	Apr. 25, 1907
Lyman B. Goff	Pres. Union Wadding Co., Pawtucket, R. I.	Sept. 21, 1905
Beirne Gordon, Jr.	Supt. The Skenandoa Cotton Co. 21 Clinton Pl., Utica, N. Y.	Apr. 28, 1910
Sir C. B. Gordon	Vice Pres. Dominion Textile Co., Ltd. 10 Victoria Sq., Montreal, Quebec, Can.	Sept. 13, 1906
Frank S. Gordon	Asst. Agt. Boston Duck Co., Bondsville, Mass.	Sept. 8, 1922
Frederick B. Gordon	Pres. Columbus Mfg. Co., Columbus, Ga.	Apr. 26, 1900
Hugh J. Gourley	Agt. Warren Mfg. Co. Water St., Warren, R. I.	Sept. 8, 1922
A. Erland Goyette	Mgr. Joseph Noone's Sons Co. Peterboro, N. H.	May 5, 1922
Max Grab	M. Grab Sons, Prague VIII, Czechoslovakia	Apr. 6, 1922
George P. Grant, Jr.	Treas. Grant Yarn Co., Fitchburg, Mass.	Sept. 27, 1894
William H. Gray	Pres. and Treas. Dedham Finishing Co. Dedham, Mass.	May 3, 1918
Edwin F. Greene	Treas. Pacific Mills 24 Federal St., Boston, Mass.	Apr. 24, 1902
Everett A. Greene	Lockwood, Greene & Co. 24 Federal St., Boston, Mass.	May 4, 1920
F. Hartwell Greene	Treas. New England Southern Mills 24 Federal St., Boston, Mass.	June 1, 1923
S. Harold Greene	Pres. New England Southern Mills 24 Federal St., Boston, Mass.	Apr. 27, 1905
George T. Greenhalgh	Treas. Greenhalgh Mills, Pawtucket, R. I.	Apr. 30, 1909
Allan B. Greenough	45 Milk St., Boston, Mass.	Oct. 24, 1918

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Samuel Greer	Supt. Lancaster Mills 40 Chestnut St., Clinton, Mass.	Apr. 24, 1923
William K. Greer	Agt. Hoosac Cotton Mills P. O. Box 258, North Adams, Mass.	Apr. 26, 1906
Oscar W. Gridley	Treas. Utica Knitting Co. Eric St., Utica, N. Y.	Apr. 28, 1910
Henry F. Grinnell	Treas. Chace Mills, Fall River, Mass.	Sept. 11, 1915
William Grosvenor	Pres. Grosvenor-Dale Co. P. O. Box 1384, Providence, R. I.	Apr. 28, 1910
David Grove	Agt. Fort Dummer Mills, Brattleboro, Vt.	Apr. 27, 1898
Percy Gulline	Agt. Columbia Textile Co. 197 Pawtucket St., Lowell, Mass.	Sept. 21, 1905
Frank J. Hale	Saco-Lowell Shops 1 Federal St., Boston, Mass.	Apr. 27, 1892
Henry T. Haley	Pres. Royal River Mfg. & Power Co. Yarmouth, Me.	Sept. 30, 1914
F. C. Hall	Agt. Manville Jenckes Co., Pawtucket, R. I.	Oct. 29, 1918
Lindsay S. Hall	Supt. Goodyear Textile Mills Los Angeles, Calif.	Oct. 16, 1919
Walter B. Hall	Agt. Whitman Mills, New Bedford, Mass.	Apr. 25, 1901
William E. Hall	365 Wilder St., Lowell, Mass.	Apr. 27, 1892
William Halliwell	Agt. Lawton Spinning Co., Woonsocket, R. I.	Sept. 26, 1901
George K. Hannah	Supt. Parkhill Mfg. Co. 70 Congress St., Fitchburg, Mass.	Apr. 24, 1923
Henry C. Harden	Supt. Great Falls Mfg. Co. Somersworth, N. H.	May 3, 1918
Charles L. Harding	Pres. Whitman Mills 77 Franklin St., Boston, Mass.	Sept. 11, 1912
Gilbert D. Harrison	Treas. Lewiston Bleach & Dye Works 253 Pine St., Lewiston, Me.	Jan. 12, 1922
Francis D. Harrower	Asst. Agt. The Wauregan Co. Wauregan, Conn.	Apr. 4, 1924
Gordon Harrower	Vice Pres. & Asst. Treas. The Wauregan Co. P. O. Box 1425, Providence, R. I.	Feb. 2, 1923
Frank Hartley	Frank Hartley & Son 146 Summer St., Boston, Mass.	Apr. 27, 1905
Walter M. Hastings	Agt. Monomac Spinning Co. Lawrence, Mass.	Apr. 23, 1903
Stephen C. Haurowitz	L. Haurowitz-Grottan, Prague II Marianska 39, Czechoslovakia.	Apr. 6, 1922
William B. Hawes	O. S. Hawes & Brother P. O. Box 733, Fall River, Mass.	Apr. 24, 1895
Harry T. Hayward	Pres. Forestdale Mfg. Co., Franklin, Mass.	Apr. 25, 1907
Charles F. Heap	Supt. The Lawton Mills Corp. Plainfield, Conn.	May 3, 1918
Thomas E. Heatley	Hunter Mfg. & Commission Co. 58-60 Worth St., New York City.	Sept. 11, 1915
Robert F. Herriek	Pres. Pacific Mills 84 State St., Boston, Mass.	Apr. 27, 1916
Alexander T. Herron	Supt. Dyeing & Finishing, Renfrew Manu- facturing Co., Adams, Mass.	Apr. 4, 1924
Fred L. Heyes	Agt. Nonquitt Spinning Co. 449 Clinton St., New Bedford, Mass.	Sept. 11, 1915
George Hinckley	Textile Broker 707 Grosvenor Bldg., Providence, R. I.	Sept. 23, 1909
Joseph H. Hindle	Supt. Print Wks. Div. American Printing Co. Water St., Fall River, Mass.	June 1, 1923
Thomas B. Hitecock	32 Fuller St., Brookline, Mass.	Apr. 13, 1911
Ernest S. Hobbs	Treas. Aurora Cotton Mills, Aurora, Ill.	Oct. 29, 1918
Clark W. Holcomb	New Bedford Boiler & Machine Co. P. O. Box 650, New Bedford, Mass.	Sept. 21, 1905

		Elected
Benjamin Holgate	Agt. Boott Mills, Lowell, Mass.	Jan. 12, 1922
Charles M. Holmes	Treas. Holmes Mfg. Co., New Bedford, Mass.	Apr. 27, 1899
Harold D. Holmes	Asst. Treas. Gosnold Mills Co. New Bedford, Mass.	May 1, 1924
Ernest N. Hood	Treas. Monomac Spinning Co. 78 Chauncy St., Boston, Mass.	Oct. 20, 1917
James P. Hooper	Vice Pres. William E. Hooper & Sons Co. Baltimore, Md.	May 3, 1918
Robert P. Hooper	Treas. Hooper Sons Mfg. Co. Juniper and Cherry Sts., Philadelphia, Pa.	Sept. 21, 1905
Thomas Hopkinson	Hopkinson Dyeing & Textile Wks. Fall River, Mass.	Apr. 25, 1912
Harry B. Hopson	Green & Hopson Stearns Bldg., Springfield, Mass.	Apr. 28, 1904
Herbert H. Horton	1313 Highland Ave., Fall River, Mass.	Apr. 17, 1908
Harry Edw. Houghton	Supt. Spinning, Dartmouth Mfg. Co. Cove St., New Bedford, Mass.	Apr. 30, 1914
Dudley R. Howe	Director, Lockwood, Greene & Co., Mgrs. 24 Federal St., Boston, Mass.	Oct. 5, 1923
Henry S. Howe	Lawrence & Co. 89 Franklin St., Boston, Mass.	Oct. 31, 1877
Percival S. Howe, Jr.	Supt. Manville Co., Social & Nourse Mills Woonsocket, R. I.	Mar. 2, 1923
Woodbury K. Howe	Asst. Supt. Merrimack Mfg. Co. Lowell, Mass.	June 7, 1919
Weston Howland	Supt. Gosnold Mills Co. New Bedford, Mass.	May 1, 1924
Alvin Hunsicker	Sec. Standard Textile Products Co. 320 Broadway, New York City.	Apr. 30, 1909
Henry P. Hunter	Supt. Equinox Mill, Anderson, S. C.	Apr. 24, 1913
H. B. Huntoon, Jr.	Treas. Providence Braid Co. P. O. Box 1271, Providence, R. I.	June 1, 1923
Maxwell C. Huntoon	Pres. Woodlawn Finishing Co. P. O. Box 1211, Providence, R. I.	June 1, 1923
Samuel Hyslop	Vice Pres. Saxony Worsted Mills Newton, Mass.	Sept. 30, 1908
Charles E. Inches	Asst. Treas. Nyanza Mills 77 Franklin St., Boston, Mass.	May 4, 1920
P. T. Jackson, Jr.	Vice Pres. American Tire Fabric Co. P. O. Box 2035, Boston, Mass.	Sept. 21, 1905
S. Eugene Jackson	Asst. Treas. Crown Mfg. Co. Pawtucket, R. I.	May 1, 1924
Joseph B. Jamieson	Treas. Multiple Winding Co. 77 Summer St., Boston, Mass.	Oct. 2, 1902
W. O. Jellene	Cohn-Hall-Marx Co. 93 Franklin St., New York City.	Aug. 5, 1919
Earl S. Jenekes	Vice Pres. & Gen. Mgr. Reading Cotton Mill, Jos. Bancroft & Sons Co. of Philadelphia Reading, Pa.	Apr. 27, 1905
Frederick L. Jenekes	Treas. Jenekes Spinning Co., Pawtucket, R. I.	Apr. 25, 1907
Edward B. Jennings	547 High St., Fall River, Mass.	Sept. 29, 1898
Allen Jones	Asst. Mgr. Beaver Mills 299 Broadway, New York City.	Oct. 5, 1922
K. Kay	Binny & Co. (Madras) Ltd., Madras, India	
Ahira Baker Kelley	Bemis Bro. Bag Co. 40 Central St., Boston, Mass.	Apr. 13, 1911
Timothy J. Kelley	Vice Pres. Brighton Mills, Passaic, N. J.	Apr. 30, 1909
Henry P. Kendall	Pres. Lewis Mfg. Co. 60 Congress St., Boston, Mass.	Apr. 29, 1915

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Joseph T. Kenney . . .	Pres. Sharp Mfg. Co., New Bedford, Mass. . .	May 3, 1918
William E. Kern, Jr. . .	Treas. Taber Mill, New Bedford, Mass. . .	Sept. 23, 1909
Hubert D. Kernan . . .	Treas. The Skenandoa Cotton Co. . . Utica, N. Y.	Apr. 28, 1910
James B. Kerr . . .	Agt. American Thread Co., Fall River, Mass. . .	Apr. 25, 1907
Allen D. Keyser . . .	Supt. Priscilla Spinning Co. . . P. O. Box 267, Gastonia, N. C.	Apr. 6, 1923
J. R. Killian . . .	Supt. Beaver Mills, North Adams, Mass. . .	Nov. 1, 1923
William N. Kimball . . .	Agt. Manville Co., Woonsocket, R. I. . .	Apr. 24, 1902
Alexander King . . .	345 Broadway, New York City . . .	Apr. 27, 1905
John T. Kirk . . .	Gen. Supt. Nashawena Mill . . . 109 Bedford St., New Bedford, Mass.	Apr. 27, 1905
Leonard Kleebe, Jr. . .	Agt. Ipswich Mills, Ipswich, Mass. . .	May 3, 1918
Jesse A. Knight . . .	Agt. Manomet Mills, New Bedford, Mass. . .	Oct. 16, 1892
Walter B. Knight . . .	Agt. Quidnick-Windham Mfg. Co. . . Willimantic, Conn.	Apr. 24, 1899
Leonard C. Lapham . . .	Treas. Nonquitt Spinning Co. . . New Bedford, Mass.	Apr. 25, 1907
Joseph T. Leach . . .	Supt. Durfee Mills, Fall River, Mass. . .	Apr. 13, 1911
William S. Lee . . .	Vice Pres. Southern Power Co. . . P. O. Box 600, Charlotte, N. C.	Apr. 13, 1911
Russell H. Leonard . . .	Treas. Ipswich Mills . . . 160 State St., Boston, Mass.	Apr. 29, 1915
W. Scott Libbey . . .	Treas. W. S. Libbey Co., Lewiston, Me. . .	May 5, 1922
Henry F. Lippitt . . .	Gen. Mgr. Manville Co. . . P. O. Box 130, Providence, R. I.	Apr. 27, 1881
Edwin V. Livesey . . .	Treas. Mt. Hope Spinning Co. . . 704 Grosvenor Bldg., Providence, R. I.	Sept. 17, 1910
H. deF. Lockwood . . .	Treas. Bates Mfg. Co. . . 60 Congress St., Boston, Mass.	Apr. 13, 1911
L. A. Lockwood . . .	New Bedford Cotton Waste Co. . . 204 Westminster St., Providence, R. I.	Sept. 21, 1905
William H. Loftus . . .	Supt. The Clark Thread Co., Newark, N. J. . .	Oct. 28, 1897
Charles E. Lord . . .	Pres. Aberfoyle Mfg. Co., Chester, Pa. . .	May 3, 1921
Harry D. Lord . . .	Saco-Lowell Shops . . . 1 Federal St., Boston, Mass.	Apr. 27, 1905
John T. Lord . . .	Supt. Pacific Mills . . . 215 Haverhill St., Lawrence, Mass.	Apr. 28, 1904
William M. Lovering . . .	Treas. Taunton Bleachery & Dye Wks. . . Taunton, Mass.	Sept. 27, 1894
Arthur H. Lowe . . .	Treas. Parkhill Mfg. Co., Fitchburg, Mass. . .	Oct. 30, 1889
David Lowe . . .	Supt. Parkhill Mfg. Co., Fitchburg, Mass. . .	Apr. 24, 1895
John Lowe . . .	Gen. Mgr. The Montreal Cottons, Ltd. . . Valleyfield, Quebec, Can.	Apr. 28, 1910
Russell B. Lowe . . .	Pres. Parkhill Mfg. Co., Fitchburg, Mass. . .	Apr. 25, 1907
George E. Luce . . .	Supt. Beaver Mills, Waterford Plant . . . Waterford, N. Y.	Apr. 28, 1910
William L. Lyall . . .	Pres. Brighton Mills, Passaic, N. J. . .	Oct. 26, 1892
Herbert Lyman . . .	Vice Pres. Merrimack Mfg. Co. . . P. O. Box 5209, Boston, Mass.	Oct. 25, 1895
Francis Lynch . . .	Agt. American Mfg. Co., Victory Mills . . . Victory Mills, N. Y.	Jan. 12, 1922
William B. MacColl . . .	Sec.-Treas. Lorraine Mfg. Co. . . Pawtucket, R. I.	Apr. 13, 1911
James F. MacEnroe . . .	54 Wilson St., Phillipsburg, N. J. . .	June 1, 1923
W. R. L. McBee . . .	Berkshire Cotton Mfg. Co., Adams, Mass. . .	Apr. 24, 1923
Bernard F. McCarty . . .	Supt. Manomet Mill No. 1 . . . New Bedford, Mass.	May 3, 1918
Edward J. McCaughey . . .	51 Arlington St., Pawtucket, R. I. . .	Apr. 26, 1906
Frederick H. McDewitt . . .	Agt. Soule Mill, New Bedford, Mass. . .	Sept. 17, 1910

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James McDowell	Sharp Mfg. Co. 99 Chauncy St., Boston, Mass.	May 4, 1920 May 4, 1920
Charles D. McDuffie	Supt. Everett Mills, Lawrence, Mass.	Oct. 5, 1923
Fred C. McDuffie	Treas. Everett Mills P. O. Box 2934, Boston, Mass.	Oct. 25, 1882
Robert C. McFadden	Supt. Whitman Mills, New Bedford, Mass.	Nov. 1, 1923
Frank R. McGowan	Chief of Textile Sec., Bureau of Standards Dept. of Commerce, Washington, D. C.	Oct. 5, 1922
John A. McGregor	Vice Pres. & Treas. Utica Steam & Mohawk Valley Cotton Mills, Utica, N. Y.	Apr. 28, 1910
Joseph B. McIntyre	166 President Ave., Providence, R. I.	Sept. 11, 1912
John E. McLoughlin	Pres. McLoughlin Textile Corp., Utica, N. Y.	Apr. 25, 1907
R. P. McLoughlin	Treas. McLoughlin Textile Corp., Utica, N. Y.	Sept. 13, 1906
Allan McNab, Jr.	Gen. Mgr. Mt. Vernon-Woodberry Mills Continental Bldg., Baltimore, Md.	Sept. 11, 1912
Sir C. W. Macara, Bart.	Henry Bannerman & Sons, Ltd. 33 York St., Manchester, Eng.	Apr. 25, 1907
A. Fergusson Macintyre	Agt. Fulton Bag & Cotton Mills P. O. Box 1726, Atlanta, Ga.	June 15, 1923
Frederick B. Maey	Frederick B. Maey & Co. 222 Union St., New Bedford, Mass.	Apr. 25, 1901
Amos G. Maddox	Supt. Linwood Cotton Mills, Linwood, Mass.	Oct. 18, 1900
Charles T. Main	Mill Engineer 200 Devonshire St., Boston, Mass.	Oct. 28, 1885
Robert Mains	66 Leonard St., New York City	Sept. 16, 1916
Alexander Makepeace	Supt. American Printing Co. Fall River, Mass.	Oct. 1, 1903
Charles R. Makepeace	Mill Engineer, P. O. Box 1146 Providence, R. I.	Apr. 30, 1890
Charles S. Makepeace	Mill Engineer, Butler Exchange Bldg. Providence, R. I.	Feb. 8, 1921
John Warren Manley	Sayles Bleacheries 185 Arlington Ave., Providence, R. I.	Apr. 30, 1909
Herbert H. Marble	Treas. Arkwright Mills P. O. Box 71, Fall River, Mass.	Apr. 30, 1890
Charles B. Marvin	Utica Willowvale Bleaching Co. 320 Broadway, New York City.	Oct. 2, 1913
Albert G. Mason	Treas. Whitman Mills, New Bedford, Mass.	Apr. 30, 1909
Frederic R. Mason	Pres. & Treas. Robert D. Mason Co. Pawtucket, R. I.	Sept. 21, 1905
J. D. Massey	Vice Pres. Eagle & Phenix Mills Columbus, Ga.	Apr. 24, 1919
Leonard H. Mellor	National Spun Silk Co., New Bedford, Mass.	Aug. 3, 1921
Bernard F. Merriam	Treas. Cordaville Woolen Co. Framingham, Mass.	Apr. 25, 1907
Joseph Merriam	Pres. Springfield Webbing Co. Middletown, Conn.	Oct. 2, 1902
Chas. H. Merriman, Jr.	Manville Co., Providence, R. I.	Apr. 24, 1895
James G. Merriman	Pres. Oswego Yarn Mills, Inc. Oswego, N. Y.	Sept. 21, 1905
William H. Merriman	Mgr. Sauquoit Spinning Co., Utica, N. Y.	Sept. 30, 1908
Herman A. Metz	Pres. H. A. Metz & Co. 122 Hudson St., New York City.	Apr. 29, 1915
J. R. Millar	Gen. Mgr. California Cotton Mills Co. Oakland, Calif.	Oct. 29, 1918
Simon Miller	Jacob Miller Sons & Co. 16th & Reed Sts., Philadelphia, Pa.	Apr. 26, 1906
Theodore F. Miller	Treas. Stead & Miller Co. 4th & Cambria Sts., Philadelphia, Pa.	Oct. 4, 1907
Albert D. Milliken	Agt. Hamilton Mfg. Co., Lowell, Mass.	Apr. 25, 1907
Joseph K. Milliken	Treas. Mount Hope Finishing Co. North Dighton, Mass.	Sept. 23, 1909

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Roscoe S. Milliken	Agt. Nashua Mfg. Co., Nashua, N. H.	Apr. 29, 1896
John F. Minnick	Supt. Dominion Textile Co., Ltd. Cote St. Paul, Montreal, Quebec, Can.	Sept. 16, 1916
Robert L. Mitchell	Treas. Beaver Mills 299 Broadway, New York City.	Aug. 3, 1921
William A. Mitchell	80 Mansur St., Lowell, Mass.	Apr. 25, 1907
Kenneth Moller	Lockwood, Greene & Co., Inc. 24 Federal St., Boston, Mass.	Apr. 29, 1915
James F. Monaghan	Con. Tex. Eng., 79 Milk St., Boston, Mass.	Apr. 28, 1910
Geo. M. Montgomery	Vice Pres. & Sec. The J. R. Montgomery Co. Windsor Locks, Conn.	Sept. 22, 1904
J. R. Montgomery	Pres. The J. R. Montgomery Co. Windsor Locks, Conn.	Sept. 29, 1898
Fred W. Moore	Lock Drawer 550, Millbury, Mass.	Apr. 27, 1892
Ernest L. Morrill	Agt. Pepperell Mfg. Co. 53 Main St., Saco, Me.	Apr. 28, 1910
Edward N. Morris	The Lawton Mills Corp. 56 Worth St., New York City.	May 3, 1918
Albert H. Morton	95 Harvard St., Lowell, Mass.	Oct. 28, 1891
Charles Morton	J. & P. Coats (R. I.), Ltd. 117 Mulberry St., Pawtucket, R. I.	May 3, 1915
Harold Mowry	Mgr. Sterling Br., U. S. Finishing Co. Sterling, Conn.	Apr. 27, 1905
Wm. Myers	Textile Dept., College of Technology Sackville St., Manchester, Eng.	Sept. 22, 1904
Frank I. Neild	Agt. Neild Mfg. Corp., New Bedford, Mass.	May 3, 1918
John Neild	Pres. Neild Mfg. Corp., New Bedford, Mass.	Apr. 25, 1901
Philip F. Nestel	Treas. Royal River Mfg. & Power Co. 22 Cotton Exchange Bldg., New York City.	Apr. 30, 1909
Charles H. Newell	Asst. Treas. Baltic Mills Co. 510 Turks Head Bldg., Providence, R. I.	Dec. 1, 1921
Henry Arthur Newton	Supt. Pacific Mills, Cocheo Dept. Dover, N. H.	Apr. 24, 1923
J. Edward Newton	Treas. Barnard Mfg. Co., Fall River, Mass.	Sept. 16, 1916
F. W. Nichols, Jr.	Treas. Nobska Spinning Co., Taunton, Mass.	Feb. 14, 1920
George Nichols	Minot, Hooper & Co. 11 Thomas St., New York City.	Sept. 11, 1916
Henry G. Nichols	Lockwood, Greene & Co., Mgrs. 24 Federal St., Boston, Mass.	June 1, 1923
Henry W. Nichols	Principal, Bradford Durfee Textile School Durfee and Bank Sts., Fall River, Mass.	Oct. 20, 1917
Howard S. O. Nichols	Treas. Great Falls Mfg. Co. 53 State St., Boston, Mass.	Sept. 29, 1911
William G. Nichols	Vice Pres. & Gen. Mgr. Griffin Mfg. Co. Griffin, Ga.	Oct. 25, 1893
Theodore O. Nicholson	79 Milk St., Boston, Mass.	Apr. 25, 1907
Albert W. Noone	Joseph Noone's Sons Co., Peterboro, N. H.	Sept. 26, 1901
Franklin Nourse	187 Nesmith St., Lowell, Mass.	Apr. 24, 1878
S. Odenheimer	Pres. Lane Cotton Mills Co. New Orleans, La.	Oct. 25, 1893
William B. Orr	Treas. Forestdale Mfg. Co., Forestdale, R. I.	Apr. 28, 1904
James F. Osborn	Treas. Merchants Mfg. Co., Fall River, Mass.	Apr. 27, 1916
John G. Oswald	Agt. Nyanza Mills, Woonsocket, R. I.	June 1, 1923
Henry Otte	Asst. Treas. The Nimigret Co., Pawtucket, R. I.	May 3, 1921
Sidney S. Paine	Asst. Mgr. Cotton Research Co. 1020 Washington St., Boston, Mass.	Apr. 27, 1916
Townsend Palmer	Sec.-Treas. The I. E. Palmer Co. Middletown, Conn.	Apr. 30, 1909
J. Earle Parker	Treas. Acadia Mills 78 Chauncy St., Boston, Mass.	Feb. 2, 1923

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Samuel Dunn Parker	Pres. Ipswich Mills 30 State St., Boston, Mass.	Sept. 11, 1912
Winthrop Parker	Supt. Cotton Mfg., Amoskeag Mfg. Co. Manchester, N. H.	Sept. 30, 1908
Brackett Parsons	Asst. to Treas. Ipswich Mills 160 State St., Boston, Mass.	Apr. 24, 1923
Winslow A. Parsons	Treas. Richmond Lace Wks. 60 Congress St., Boston, Mass.	May 3, 1918
John L. Patterson	P. O. Box 1481, Richmond, Va.	Apr. 13, 1911
Samuel F. Patterson	Treas. Roanoke Mills Co. Roanoke Rapids, N. C.	Oct. 18, 1900
George F. Payne	169 Columbia Ave., Edgewood, Providence, R. I.	Apr. 28, 1910
John A. Pearson	354 Fourth Ave., New York City	Apr. 30, 1914
William A. Pedler	Agt. Acadia Mills, Lawrence, Mass.	Apr. 30, 1914
William C. Peirce	Pres. Elizabeth Mills 30 Allens Ave., Providence, R. I.	Apr. 24, 1895
Wm. S. Pepperell	Asst. Treas. Grosvenor-Dale Co. P. O. Box 1384, Providence, R. I.	Mar. 2, 1922
John A. Perkins	Agt. Harmony Mills, Cohoes, New York	Apr. 28, 1910
J. Henry Perkins	2 Johnson Ave., Cohoes, N. Y.	Jan. 12, 1922
Ralph C. Perkins	Stephen M. Weld & Co. 791 Purchase St., New Bedford, Mass.	Apr. 26, 1910
Ramsey Peugnet	Sec. & Treas. U. S. Testing Co., Inc. 340 Hudson St., New York City.	Apr. 17, 1908
William D. Phillips	Supt. Naumkeag Steam Cotton Co. 347 Lafayette St., Salem, Mass.	Apr. 30, 1914
Albert R. Pierce	Supt. Pierce Mfg. Corp. New Bedford, Mass.	Oct. 5, 1899
Andrew G. Pierce, Jr.	Treas. Pierce Mfg. Corp. P. O. Box 733, New Bedford, Mass.	Apr. 24, 1906
A. E. Pingree	Supt. Ponemah Mills, Taftville, Conn.	Apr. 4, 1924
Robert Place	Supt. Flint Mills 609 Cherry St., Fall River, Mass.	Apr. 26, 1906
Charles T. Plunkett	Pres. Berkshire Cotton Mfg. Co. Adams, Mass.	Apr. 28, 1897
John Porteous	Pres. The Lawton Mills Corp. Plainfield, Conn.	May 3, 1918
Carl H. Potter	Frank W. Van Ness & Associates 17 E. 42d St., New York City.	Nov. 5, 1918
Charles H. Potter	Gen. Supt. The Montreal Cottons, Ltd. Valleyfield, Quebec, Can.	Apr. 25, 1901
Edward S. Pratt	Asst. Treas. Samson Cordage Wks. Shirley, Mass.	Apr. 26, 1917
Robert W. Prentice	Treas. Butler, Prentice & Co., Inc. 320 Broadway, New York City.	Apr. 24, 1913
George E. Prest	Agt. Suncook Mills, Suncook, N. H.	Apr. 24, 1902
Isaac T. Prosser	Mgr. Chicopee Mfg. Corp. Chicopee Falls, Mass.	Apr. 25, 1912
Frederick J. Quinn	Treas. Atlas Yarn Co. 161 Devonshire St., Boston, Mass.	Apr. 26, 1906
Patrick H. Quinn	Treas. Warwick Lace Wks. Riverpoint, R. I.	May 3, 1918
William W. Quinton	Agt. Lockwood Co., Waterville, Me.	June 15, 1923
Benjamin G. Rae	Treas. Futurity Thread Co. 80 Bridge St., Newton, Mass.	Apr. 29, 1915
Andrew Raeburn	Sec. New Bedford Cotton Mfrs. Assn. Masonic Bldg., New Bedford, Mass.	Apr. 24, 1923
Theodore E. Ramsdell	Agt. Monument Mills, Housatonic, Mass.	Apr. 23, 1903
M. A. Rawlinson	Agt. Tremont and Suffolk Mills Lowell, Mass.	Apr. 24, 1895



		Elected
Charles O. Read	Pres. Sayles Finishing Plants 63 Summit St., Pawtucket, R. I.	Sept. 21, 1905
John F. Reardon	Agt. Grosvenor-Dale Co. No. Grosvenor-Dale, Conn.	Sept. 8, 1922
H. Stewart Redman	Agt. Cordis Mills, Millbury, Mass.	Apr. 27, 1916
T. H. Rennie	Vice Pres. Avondale Mill, Pell City, Ala.	Oct. 18, 1900
Robert A. S. Reoch	Supt. Pacific Mills, Print Works Dept. Lawrence, Mass.	Sept. 17, 1900
Frederic W. Reynolds	25 Walnut St., Stoughton, Mass.	Apr. 26, 1900
Raymond A. Rice	Treas. Southbridge Printing Co. Southbridge, Mass.	Oct. 20, 1917
Chas. O. Richardson	Treas. Warwick Mills 49 Federal St., Boston, Mass.	Apr. 25, 1912
E. R. Richardson	Treas. H & B American Machine Co. P. O. Box 678, Pawtucket, R. I.	Apr. 13, 1911
Harry Richardson	Supt. Aldrich Bros. Co., Moosup, Conn.	Nov. 3, 1921
Frank B. Ricketson	Asst. Treas. The Quimbaug Co. Providence, R. I.	Apr. 13, 1911
Charles E. Riley	Pres. H & B American Machine Co. 200 Devonshire St., Boston, Mass.	Apr. 25, 1888
Richard G. Riley	Supt. King Philip Mills, Fall River, Mass.	Apr. 25, 1907
Charles H. Robbins	Supt. Manomet Mill No. 3 New Bedford, Mass.	May 3, 1918
Joseph Roberts	Supt. Renfrew Mfg. Co., Adams, Mass.	May 3, 1918
George W. Robertson	Gen. Supt. Riverside & Dan River Cotton Mills, Danville, Va.	Apr. 26, 1906
William H. Robertson	Treas. The Robertson Bleachery & Dye Wks., Inc., Drawer E, New Milford, Conn.	Sept. 16, 1916
C. M. Robinson	Supt. The Wauregan Co., Wauregan, Conn.	June 29, 1920
Lee Rodman	Pres. & Treas. Indiana Cotton Mills Cannelton, Ind.	Sept. 17, 1910
George W. Rooney	Supt. New Hampshire Spinning Mills 31 Canal St., Penacook, N. H.	Sept. 30, 1914
Luke H. Rooney	Supt. Manomet Mill No. 2 150 Merrimac St., New Bedford, Mass.	Oct. 20, 1917
John E. Rousmaniere	Lawrence & Co. 24 Thomas St., New York City.	Apr. 13, 1911
Howard I. Russell	Treas. & Mgr. Russell Mfg. Co. Manchester, N. H.	Apr. 13, 1911
Arthur T. Safford	66 Broadway, Lowell, Mass.	Nov. 12, 1919
Alfred Sagar	Treas. Bolton Worsted Mill, Inc. Methuen, Mass.	Apr. 24, 1902
Everett E. Salisbury	Agt. Atlantic Mills, Providence, R. I.	Sept. 30, 1908
W. K. Sanborn	Supt. American Net & Twine Co. R. W. Lord Mill, West Kennebunk, Me.	Apr. 25, 1907
Pardon B. Sanford	Supt. Chalmers Knitting Co. Amsterdam, N. Y.	Oct. 2, 1902
James Schofield	Box 601, Suncook, N. H.	May 4, 1920
Robert Schofield	Agt. Sharp Mfg. Co., New Bedford, Mass.	Apr. 25, 1907
Albert L. Scott	Vice Pres. Lockwood, Greene & Co., Inc. 24 Federal St., Boston, Mass.	Sept. 11, 1912
Thomas J. Seaton	Vice Pres. & Supt. The Floyd Cranska Co., Moosup, Conn.	Nov. 1, 1923
Hermann Seydel	Pres. Seydel Chemical Co. 86 Forrest St., Jersey City, N. J.	Apr. 28, 1910
Benjamin C. Shaw	Supt. Boston Duck Co., Bondsville, Mass.	Oct. 29, 1918
Ernest E. Shelters	Supt. Tremont & Suffolk Mills Lowell, Mass.	Apr. 30, 1909
W. Frank Shove	Treas. Pocasset Mfg. Co., Fall River, Mass.	Sept. 22, 1904
Nathaniel G. Simonds	Treas. Naumkeag Steam Cotton Co. Salem, Mass.	Apr. 27, 1898

		Elected
John Skinner . . .	60 Harrison Ave., Northampton, Mass. . .	Apr. 26, 1906
Abbott E. Slade . . .	863 High St., Fall River, Mass. . .	Oct. 25, 1893
Albert E. Smith . . .	Mgr. New Bedford & Agawam Finishing Co. East Wareham, Mass. . .	Dec. 7, 1923
Albert G. Smith . . .	Agt. Grant Yarn Co., Fitchburg, Mass. . .	Apr. 30, 1909
Archer J. Smith . . .	Pres. The American Mills Co. . . Waterbury, Conn. . .	Apr. 26, 1906
Frederick K. Smith . . .	Supt. Cotton Dept., Ipswich Mills . . . Ipswich, Mass. . .	Apr. 24, 1923
Henry Kay Smith . . .	500 East 6th St., Jamestown, N. Y. . .	Oct. 4, 1907
J. Foster Smith . . .	Agt. Naumkeag Steam Cotton Co. . . Salem, Mass. . .	May 3, 1918
Thomas Henry Smith . . .	56 Center St., Jamestown, N. Y. . .	Apr. 30, 1884
William Smith . . .	Principal New Bedford Textile School . . . New Bedford, Mass. . .	May 3, 1921
Ellison A. Smyth . . .	Flat Rock, N. C. . .	Apr. 13, 1911
George Sneddon . . .	Supt. Grinnell Mfg. Corp. . . New Bedford, Mass. . .	Apr. 25, 1912
Rufus A. Soule, Jr. . .	Treas. Soule Mill, New Bedford, Mass. . .	Apr. 26, 1906
Irving Southworth . . .	Agt. Pacific Mills, Lawrence, Mass. . .	Apr. 13, 1911
Antonio Spencer . . .	Pres. U. S. Ring Traveler Co. . . 341 Butler Exchange Bldg., Providence, R. I. . .	May 3, 1918
George E. Spofford . . .	Vice Pres. Langley Mills, Langley, S. C. . .	Apr. 29, 1896
Francis U. Stearns . . .	Vice Pres. Renfrew Mfg. Co., Adams, Mass. . .	Apr. 30, 1909
George R. Stearns . . .	Pres. Riverside Mills, Augusta, Ga. . .	Apr. 30, 1890
Walter H. Stearns . . .	Vice Pres. Riverside Mills . . . 57 Summit St., Pawtucket, R. I. . .	May 5, 1922
Fred W. Steele . . .	Treas. Booth Mfg. Co., New Bedford, Mass. . .	Sept. 11, 1912
Samuel A. Steere . . .	Mgr. Cotton & Fabric, The Goodyear Tire & Rubber Co., Akron, Ohio. . .	Oct. 5, 1920
Winthrop E. Steinbach . . .	27 Imperial Avenue, Cohoes, N. Y. . .	Aug. 3, 1921
Dexter Stevens . . .	Mgr. The Esmond Mills, Esmond, R. I. . .	Apr. 25, 1907
John A. Stevens . . .	Consulting Engineer, 8 Merrimack St. . . Sun Bldg., Lowell, Mass. . .	Apr. 25, 1907
T. B. Stevenson . . .	Gen. Mgr. The Henrietta Mills . . . Caroleen, N. C. . .	Apr. 26, 1900
Samuel Stewart . . .	Agt. Bates Mfg. Co., Lewiston, Me. . .	Apr. 23, 1903
Walter F. Stiles . . .	Treas. Orswell Mills, Fitchburg, Mass. . .	Sept. 23, 1909
Wallace E. Stoddard . . .	Asst. Treas. Berkshire Cotton Mfg. Co. . . Adams, Mass. . .	June 29, 1920
Malcolm B. Stone . . .	Treas. Ludlow Mfg. Associates . . . 111 Devonshire St., Boston, Mass. . .	Apr. 25, 1912
Herman F. Straw . . .	Cons. Engineer, Amoskeag Mfg. Co. . . Manchester, N. H. . .	Oct. 28, 1885
William Parker Straw . . .	Agt. Amoskeag Mfg. Co., Manchester, N. H. . .	Oct. 4, 1907
John B. Strongman . . .	Treas. City Mfg. Corp., New Bedford, Mass. . .	Apr. 26, 1917
James A. Sullivan . . .	Supt. Taber Mill, New Bedford, Mass. . .	May 3, 1918
John Sullivan . . .	Agt. Taber Mill, New Bedford, Mass. . .	Apr. 27, 1899
Timothy Sullivan . . .	314 Cory St., Fall River, Mass. . .	Apr. 27, 1899
Arthur Clinton Swift . . .	Gen. Mgr. Maverick Mills . . . 144 Addison St., East Boston, Mass. . .	Apr. 6, 1923
Alfred P. Symonds . . .	Binny & Co. (Madras), Ltd. . . Post Box 66, Madras, India. . .	Apr. 6, 1920
Frederick Taber . . .	Pres. Taber Mill, New Bedford, Mass. . .	Apr. 26, 1906
Charles A. Tabor . . .	Agt. Thorndike Co., Thorndike, Mass. . .	Apr. 27, 1905
Robert W. Taft . . .	Treas. Coventry Co. . . P. O. Box 1364, Providence, R. I. . .	Sept. 27, 1894
Narazo Takatsuji . . .	Karasumaru-dori Imadegawaagaru . . . Kyoto, Japan. . .	Apr. 17, 1908
Henry M. Tarr . . .	Traffic Mgr. Cotton Piece Goods Traffic Assn. . . 13 Market Sq., Providence, R. I. . .	June 2, 1922

			Elected
Daniel L. Taylor . . .	Traffic Mgr. Pacific Mills . . .	June 2, 1922	
	24 Federal St., Boston, Mass.		
Havila B. Taylor . . .	Supt. Cotton Dept. Pacific Mills . . .	Oct. 29, 1918	
	193 Bailey St., Lawrence, Mass.		
James W. Taylor . . .	Agt. Fuld & Hatch Knitting Co. . .	Oct. 26, 1892	
	P. O. Box 144, Cohoes, N. Y.		
Samuel Taylor . . .	Supt. Bristol Mfg. Co., New Bedford, Mass.	Oct. 1, 1903	
George A. Tenney . . .	Treas. Monadnock Mills, Claremont, N. H. . .	Sept. 29, 1911	
Albert G. Thatcher . . .	Pres. Standard-Coosa-Thatcher Co. . .	Apr. 27, 1916	
	720 Lafayette Bldg., Philadelphia, Pa.		
S. Willard Thayer . . .	Treas. Dexter Yarn Co., Pawtucket, R. I. . .	Sept. 26, 1901	
Norman T. Thomas . . .	Supt. Nashua Mfg. Co., Jackson Mills . . .	Oct. 16, 1919	
	Nashua, N. H.		
Albert W. Thompson . . .	Parks-Cramer Co., . . .	Apr. 30, 1909	
	1102 Old South Bldg., Boston, Mass.		
Gilbert T. Thompson . . .	Treas. Berkshire Cotton Mfg. Co. . .	Apr. 30, 1914	
	Adams, Mass.		
Henry B. Thompson . . .	Pres. U. S. Finishing Co., 320 Broadway . . .	May 3, 1918	
	New York City.		
James O. Thompson, Jr. . .	Agt. New Bedford Cotton Mills Corp. . .	Oct. 18, 1900	
	New Bedford, Mass.		
Charles R. Thomson . . .	Supt. Solway Dyeing & Textile Co. . .	Apr. 27, 1905	
	41 Lyon St., Pawtucket, R. I.		
James Thomson . . .	P. O. Box 820, New Bedford, Mass. . .	Apr. 25, 1907	
Ward Thoron . . .	Treas. Merrimack Mfg. Co. . .	May 4, 1920	
	P. O. Box 5209, Boston, Mass.		
Emerson B. Tift . . .	Asst. Supt. Harmony Mills . . .	Mar. 7, 1924	
	81 Vliet St., Cohoes, N. Y.		
Frank H. Tift . . .	R. F. D. No. 2, Willimantic, Conn. . .	Mar. 9, 1920	
John E. Tobin . . .	Supt. Queen City Cotton Co., Burlington Vt. . .	June 4, 1919	
W. O. Todd . . .	Pres. & Treas. Pocasset Worsted Co., Inc. . .	Oct. 8, 1900	
	Thornton, R. I.		
Carl T. Tourtellot . . .	Agt. Renfrew Mfg. Co., Adams, Mass. . .	Oct. 29, 1918	
George W. Towne . . .	62 Salem St., North Andover, Mass. . .	Oct. 26, 1892	
Parker Tuck . . .	Gen. Mgr. Universal Textile Corp. . .	Feb. 2, 1923	
	Lowell, Mass.		
George E. Tucker . . .	Agt. Otis Co., Ware, Mass. . .	Oct. 25, 1895	
Philip M. Tucker . . .	Pres. Philip M. Tucker Co. . .	Apr. 25, 1912	
	291 Devonshire St., Boston, Mass.		
Philip S. Tuley . . .	Pres. Louisville Cotton Mills Co. . .	Oct. 18, 1900	
	1318 McHenry St., Louisville, Ky.		
Henry Tunstall . . .	12 Maple Ave., Fairhaven, Mass. . .	Sept. 21, 1905	
Charles A. Turner . . .	Pres. Chester Lace Mills, Chester, Pa. . .	Mar. 7, 1924	
William D. Twiss . . .	Agt. Everett Mills, Lawrence, Mass. . .	Apr. 29, 1896	
Walter H. Underdown . . .	Treas. New Bedford Cotton Mills Corp. . .	Sept. 23, 1909	
	New Bedford, Mass.		
Charles S. Underwood . . .	Mgr. American Cotton Fabric Corp. . .	Jan. 11, 1924	
	Passaic, N. J.		
Frederick A. Upham . . .	Agt. Otis Co. Palmer Mill . . .	Sept. 13, 1906	
	Three Rivers, Mass.		
W. M. Vermilye . . .	930 Madison Ave., Plainfield, N. J. . .	Oct. 5, 1923	
Robert G. Vickery . . .	Cabot Mfg. Co. . .	June 1, 1923	
	77 Franklin St., Boston, Mass.		
Jude C. Wadleigh . . .	Agt. Merrimack Mfg. Co., Lowell, Mass. . .	Oct. 26, 1892	
E. Dean Walen . . .	Mgr. Cotton Research Co., Inc. . .	May 3, 1921	
	1020 Washington St., Boston, Mass.		
Thomas H. Walker . . .	Asst. Treas. Lorraine Mfg. Co. . .	Apr. 24, 1923	
	Pawtucket, R. I.		

		Elected
Robert S. Wallace . . .	Treas. Fitchburg Yarn Co., Fitchburg, Mass.	Apr. 25, 1912
Herbert Walmsley . . .	The Fisk Rubber Co. Broadway and 57th St., New York City.	Sept. 30, 1908
Jack Walmsley . . .	Mech. Supt. Manomet Mills 245 Query St., New Bedford, Mass.	Jan. 12, 1922
Frederick T. Walsh . . .	12 Valentine St., West Newton, Mass.	Apr. 28, 1897
Benjamin I. Ward . . .	Pres. Bellman Brook Bleachery Co. Fairview, N. J.	Sept. 30, 1908
Fred E. Wattles . . .	Asst. Supt. New Hampshire Spinning Mills Penacook, N. H.	Oct. 5, 1899
Ridley Watts . . .	Ridley Watts & Co. 44 Leonard St., New York City.	Apr. 25, 1907
Joseph W. Webster . . .	Treas. Grinnell Mfg. Corp. New Bedford, Mass.	Apr. 28, 1910
William R. West . . .	1886 Purchase St., New Bedford, Mass.	Sept. 22, 1896
Walter Whipple . . .	Agt. Nashua Mfg. Co., Nashua, N. H.	Sept. 13, 1906
James D. Whitaker . . .	Agt. Lola Cotton Mills 683 Atlantic Ave., Boston, Mass.	May 1, 1924
James L. Whitaker . . .	William Whitaker & Sons Olney, Philadelphia, Pa.	Sept. 21, 1905
Nelson D. White . . .	Gen. Mgr. N. D. White & Sons Winchendon, Mass.	Sept. 11, 1912
Arthur F. Whitin . . .	Pres. Saunders Cotton Mills Whitinsville, Mass.	Apr. 24, 1895
Henry T. Whitin . . .	Treas. Paul Whitin Mfg. Co. Northbridge, Mass.	Apr. 25, 1877
James Earl Whitin . . .	Treas. James Whitin, Inc. No. Uxbridge, Mass.	Apr. 23, 1903
Paul Whitin . . .	Treas. Paul Whitin Mfg. Co. Northbridge, Mass.	Oct. 1, 1903
Harold C. Whitman . . .	Treas. The Esmond Mills 354 Fourth Ave., New York City.	Apr. 25, 1907
Hendricks H. Whitman . . .	Monomac Spinning Co. 78 Chauncy St., Boston, Mass.	Apr. 29, 1905
William Whitman . . .	Nonquitt Spinning Co. P. O. Box 100, Boston, Mass.	Apr. 25, 1901
John G. Whittaker . . .	Mgr. Lonsdale Bleachery, Lonsdale, R. I.	Apr. 17, 1908
Stephen T. Whittier . . .	Catlin & Co., 345 Broadway, New York City	Apr. 13, 1911
W. R. B. Whittier . . .	Treas. Whittier Mills, Chattahoochee, Ga.	Oct. 18, 1900
Charles B. Wiggin . . .	Pres. The Wauregan Co., Wauregan, Conn.	Oct. 27, 1917
Frederic S. Wiggin . . .	Asst. Supt. Lonsdale Co., Ashton, R. I.	Oct. 29, 1918
Benjamin Wilcox . . .	269 Kent St., Brookline, Mass.	Apr. 26, 1900
Paul C. Wilde . . .	Supt. Middlesex Bleach, Dye & Print Wks. 39 Wildwood St., Winchester, Mass.	Jan. 5, 1923
Jesse S. Wiley . . .	Treas. Columbus Mfg. Co. 201 Devonshire St., Boston, Mass.	May 5, 1922
Eben C. Willey . . .	110 June St., Fall River, Mass.	Apr. 29, 1896
Walter S. Williams . . .	Mount Hope Finishing Co. North Dighton, Mass.	Apr. 30, 1909
William E. Winchester . . .	Vice Pres. Deering, Milliken & Co., Inc. 79 Leonard St., New York City.	Apr. 24, 1902
Robert Winsor . . .	Kidder, Peabody & Co. 115 Devonshire St., Boston, Mass.	Apr. 28, 1910
Samuel F. Winsper . . .	Supt. City Manufacturing Corp. New Bedford, Mass.	May 3, 1918
Rex G. Witherbee . . .	Utica Steam & Mohawk Valley Cotton Mills 801 State St., Utica, N. Y.	Apr. 26, 1906
George Wood . . .	Pres. & Treas. Millville Mfg. Co. 626 Chestnut St., Philadelphia, Pa.	Oct. 16, 1872
John P. Wood . . .	Aberfoyle Mfg. Co. 521 North 22d St., Philadelphia, Pa.	Apr. 28, 1897
Kenneth F. Wood . . .	Treas. Sayles Finishing Plants Saylesville, R. I.	Sept. 23, 1906

		Elected
Theodore Wood	R. J. Caldwell Co. 15 Park Row, New York City.	Sept. 11, 1915
W. Sanford Woodbury	24 High St., Newburyport, Mass.	Mar. 2, 1922
Cyrus Woodman	Attawaugan Co., P. O. Box 497, Norwich, Conn.	Apr. 6, 1922
Marcus J. Woodrow	Exeter Mfg. Co., Exeter, N. H.	Apr. 26, 1906
Frank F. Woolley	Agt. Coventry Co., Anthony, R. I.	Apr. 27, 1905
Wm. Worsnop	Agt. Cabot Mfg. Co., Brunswick, Me.	Nov. 1, 1923
Harry Wyldé	979 Essex St., Lawrence, Mass.	Apr. 13, 1911
Alan V. Young	Mgr. Hamilton Cotton Co. Hamilton, Ontario, Can.	Sept. 11, 1915
Chas. Wm. Young	Supt. Goodyear Cotton Mills, Inc. Goodyear, Conn.	Oct. 5, 1923

## ASSOCIATE MEMBERS

Lewis F. Allen	Treas. Dinsmore Mfg. Co., Salem, Mass.	Apr. 28, 1910
Allan W. Ames	Bankers Trust Co. 16 Wall St., New York City.	May 1, 1924
Will B. Anderson	Mgr. Barber-Colman Co. 77 Washington St. North, Boston, Mass.	May 3, 1918
Eugen C. Andres	Eugen C. Andres Co. 20 Central St., Boston, Mass.	Oct. 18, 1900
Frederick H. Andres	Treas. Frederick H. Andres, Inc. 45 Milk St., Boston, Mass.	Sept. 30, 1914
L. D. Armstrong	Atherton Pin Grid Bar Co. 26 Fountain St., Providence, R. I.	May 24, 1920
Charles S. Ashley, Jr.	Charles S. Ashley & Sons 11-15 North Sixth St., New Bedford, Mass.	June 2, 1922
Henry Ashworth	Ashworth Brothers, Inc. P. O. Box 776, Fall River, Mass.	Apr. 28, 1897
Thomas Aspden	Canadian-Connecticut Cotton Mills Sherbrooke, Quebec, Can.	May 5, 1922
Frederick E. Atteaux	Pres. Frederick E. Atteaux & Co., Inc. 176 Purchase St., Boston, Mass.	Apr. 26, 1917
Isaac N. Babbitt	Treas. & Gen. Mgr. Babbitt Steam Spec. Co. 57 So. Water St., New Bedford, Mass.	Sept. 7, 1923
Luther C. Baldwin	Pres. U. S. Bobbin & Shuttle Co. 57 Eddy St., Providence, R. I.	Sept. 17, 1910
Joel M. Barnes	Harpham, Barnes, Stevenson & Co., Inc. 79 Milk St., Boston, Mass.	Sept. 29, 1911
George S. Barnum	Pres. & Treas. The Bigelow Co. New Haven, Conn.	Apr. 24, 1895
Walwin Barr	American Bleached Goods Co. 39 Leonard St., New York City.	Apr. 30, 1914
C. C. Bassett, Jr.	The Viscose Company 171 Madison Ave., New York City.	Oct. 5, 1923
Lyman C. Bauldry	Dept. Mgr. The Pairpoint Corp. New Bedford, Mass.	Apr. 5, 1921
W. DeFord Beal	Cooper & Brush, 53 State Street, Boston, Mass.	May 1, 1924
Colin C. Bell	National Vulcanized Fibre Co. Maryland Ave. & Beech St., Wilmington, Del.	Apr. 29, 1896
E. Howard Bennett	American Wool & Cotton Reporter 530 Atlantic Ave., Boston, Mass.	Apr. 30, 1914
Edward H. Best	Edward H. Best & Co. P. O. Box 2207, Boston, Mass.	Apr. 23, 1903
Frederick H. Bishop	Universal Winding Co. 95 South St., Boston, Mass.	Apr. 26, 1900

		Elected
Edmund E. Blake . . .	Saco-Lowell Shops, Biddeford, Me. . .	Oct. 2, 1902
Francis P. Blake . . .	Bay State Belting Co. . .	May 3, 1921
	349 Congress St., Boston, Mass.	
Theodore P. Bogert . . .	Sec. Mfrs. Mut. F. I. Co., Providence, R. I. . .	Apr. 13, 1911
John Bolinger . . .	Vice Pres. National Shawmut Bank . . .	Dec. 12, 1918
	Boston, Mass.	
Amos Miller Bowen . . .	Treas. U. S. Ring Traveler Co. . .	Apr. 6, 1923
	159 Aborn St., Providence, R. I.	
Garrett D. Bowne, Jr. . .	Westinghouse Elec. & Mfg. Co. . .	Apr. 29, 1911
	10 High St., Boston, Mass.	
Arthur T. Bradlee . . .	Pres. William Whitman Co., Inc. . .	Apr. 25, 1901
	78 Chauncy St., Boston, Mass.	
George G. Brown . . .	Treas. The David Brown Co. . .	Dec. 27, 1918
	Cor. Foster & Market Sts., Lawrence, Mass.	
Stuart F. Brown . . .	Agt. Whitinsville Spinning Ring Co. . .	Mar. 2, 1922
	Whitinsville, Mass.	
Fred C. Bryant . . .	Curtis & Marble Machine Co. . .	May 1, 1924
	72 Cambridge St., Worcester, Mass.	
Charles B. Burleigh . . .	General Electric Co. . .	Oct. 1, 1903
	84 State St., Boston, Mass.	
Arthur Cecil Butler . . .	Leigh & Butler . . .	Apr. 28, 1904
	232 Summer St., Boston, Mass.	
Harry W. Butterworth . . .	Pres. H. W. Butterworth & Sons Co. . .	Oct. 28, 1897
	York & Cedar Sts., Philadelphia, Pa.	
G. Bradford Chadwick . . .	213 Industrial Trust Bldg., Providence, R. I.	Sept. 11, 1912
Charles A. Chase . . .	Asst. Mgr. M. P. Dept., General Electric Co.	June 2, 1922
	84 State St., Boston, Mass.	
Frederic L. Chase . . .	F. A. Chase & Co. . .	Mar. 2, 1923
	253 West Exchange St., Providence, R. I.	
James E. Cheesman . . .	Champlain Silk Mills . . .	May 3, 1921
	634 Hospital Trust Bldg., Providence, R. I.	
John T. Chidsey . . .	Pres. & Treas. The Root Co. . .	June 15, 1923
	Church St., Bristol, Conn.	
Thomas J. Clexton . . .	Mgr. A. Klipstein & Co. . .	Sept. 13, 1906
	285 Congress St., Boston, Mass.	
Melvin H. Coffin . . .	National Ring Traveler Co., Providence, R. I.	Oct. 2, 1902
Howard D. Colman . . .	Pres. Barber-Colman Co., Rockford, Ill.	Apr. 27, 1905
Henry B. Congdon . . .	Vice Pres. Industrial Trust Co. . .	Apr. 24, 1923
	Providence, R. I.	
Kenneth B. Cook . . .	Mgr. Textile Section, U. S. Rubber Co. . .	July 15, 1922
	122 Adams St., Newark, N. J.	
J. L. Coon . . .	Atkinson, Haserick & Co. . .	May 3, 1918
	152 Congress St., Boston, Mass.	
James A. Cooper . . .	Whitin Machine Works, Whitinsville, Mass.	Sept. 13, 1906
B. S. Cottrell . . .	Parks-Cramer Co. . .	May 3, 1918
	1102 Old South Bldg., Boston, Mass.	
Thomas G. Cox . . .	Treas. Mason Machine Works . . .	Apr. 24, 1895
	P. O. Box 316, Taunton, Mass.	
Leonard W. Cronkhite . . .	Pres. Leonard W. Cronkhite, Inc. . .	Apr. 30, 1909
	348 Congress St., Boston, Mass.	
Stanley R. Cummings . . .	Research Engr. The Hoover Co. . .	Mar. 7, 1924
	North Canton, Ohio.	
Joseph L. Cushing . . .	Daniel Cushing & Co. . .	Apr. 26, 1900
	Fletcher & Rock Sts., Lowell, Mass.	
Sydney R. David . . .	S. R. David & Co., Inc. . .	Oct. 20, 1917
	P. O. Box 2443, Boston, Mass.	
Edward H. Davis . . .	In Chg. of Lab. Cotton Research Co. . .	Apr. 6, 1923
	1020 Washington St., Boston, Mass.	
Poncet Davis . . .	Poncet Davis Co., 225 Ohio Bldg., Akron, O.	June 1, 1923

		Elected
Arthur D. Delano	Treas. Manufacturers' Supply Co. 384 Acushnet Ave., New Bedford, Mass.	May 5, 1919
Henry B. Deming	H. B. Deming & Co. P. O. Box 1192, Providence, R. I.	Nov. 26, 1918
Frederick N. Dillon	D. M. Dillon Steam Boiler Wks. Fitchburg, Mass.	Sept. 22, 1904
Ezra Dixon	Pres. Dixon Lubricating Saddle Co. Bristol, R. I.	Sept. 21, 1905
John S. Dooley	William J. Dooley & Co. 60 Congress St., Boston, Mass.	Feb. 11, 1919
Arthur T. Downer	Treas. & G. M. The Winchester Laundries, Inc., Converse Pl., Winchester, Mass.	June 1, 1923
John Duff	David Duff & Son, New Bedford, Mass.	Apr. 28, 1910
Frederic E. Earle	Pres. & Treas. F. E. Earle Co. 30 North St., Fairhaven, Mass.	Apr. 6, 1923
J. Richmond Fales	Vice Pres. Fales & Jenks Machine Co. Pawtucket, R. I.	Apr. 24, 1923
J. C. Ferguson	Gen. Mgr. Eclipse Textile Co., Inc. Elmira, N. Y.	May 3, 1921
John W. Ferguson	152 Market St., Paterson, N. J.	Apr. 24, 1895
George W. Foster	Universal Winding Co. P. O. Box 1513, Providence, R. I.	Sept. 11, 1915
E. T. Fowler	Treas. & Mgr. Foster Machine Co. Westfield, Mass.	Apr. 26, 1906
George W. Fraker	Vice Pres. National City Bank New York City.	Mar. 1, 1919
Thomas W. France	56 Linwood Ave., Providence, R. I.	Dec. 7, 1923
Charles L. Gagnebin	Vice Pres. H. A. Metz & Co., Inc. 130 Oliver St., Boston, Mass.	Apr. 30, 1914
N. L. R. Gardner	Pres. R. L. Greene Paper Co. 50 Fountain St., Providence, R. I.	Sept. 29, 1911
Gustav Wm. Goerner	Roessler & Hasslacher Chemical Co. 40 Central St., Boston, Mass.	Apr. 27, 1916
Wm. H. Goldsmith, Jr.	Chief Engineer, Saco-Lowell Shops 1 Federal St., Boston, Mass.	Oct. 20, 1917
Ralph V. Grandison	Agt. Hazard Cotton Co. P. O. Box 1835, Boston, Mass.	June 29, 1920
Frank M. Gunby	c/o Charles T. Main 200 Devonshire St., Boston, Mass.	Apr. 26, 1917
Edwin D. Hague	Whitin Machine Wks. Whitinsville, Mass.	Oct. 5, 1922
Andrew J. Haire	Pres. Haire Publishing Co., "Textiles" 1170 Broadway, New York City.	Dec. 1, 1922
H. Dwight Hall	Sec. Boston Mfrs. Mutual Fire Ins. Co. 185 Franklin St., Boston, Mass.	June 1, 1923
John H. Hanaford	89 State St., Boston, Mass.	May 3, 1918
Herbert Harrison	Agt. John Hetherington & Sons, Ltd. 49 Federal St., Boston, Mass.	Jan. 14, 1919
Edgar F. Hathaway	Vice Pres. & Gen. Mgr. Shawmut Engineering Co., 195 Freeport St., Dorchester, Mass.	Apr. 27, 1905
J. Fred Havey	Mgr. For. Sales Dept., Saco-Lowell Shops 1 Federal St., Boston, Mass.	Sept. 17, 1910
Richard Haworth	Mgr. Richard Haworth, Inc. 25 Fountain St., Providence, R. I.	Mar. 7, 1924
C. C. Hedrick	c/o Yokohama Ki-ito Kwaisha, Ltd. 35, Kitahama, 5 Chome, Higashiku, Osaka, Japan	Apr. 23, 1903

		Elected
Robert F. Herrick, Jr.	Gen. Agt. Saco-Lowell Shops 1 Federal St., Boston, Mass.	Apr. 6, 1920
Fred L. Hervey	Pres. F. L. Hervey & Co. 373 New Boston Rd., Fall River, Mass.	May 5, 1919
Edwin D. Hewins	Pres. & Treas. E. D. Hewins, Inc. 72 Lincoln St., Boston, Mass.	Oct. 5, 1922
Everett H. Hinckley	Borne-Scrymser Co. 17 Battery Pl., New York City.	Aug. 3, 1921
Charles E. Hodges	Pres. American Mutual Liability Ins. Co. 245 State St., Boston, Mass.	Apr. 17, 1908
Frederic W. Howe	Vice Pres. Crompton & Knowles Loom Wks. P. O. Box 1361, Providence, R. I.	Apr. 24, 1902
James Carleton Howe	Vice Pres. Old Colony Trust Co. 17 Court St., Boston, Mass.	Sept. 11, 1912
Parkman D. Howe	Treas. Saco-Lowell Shops 1 Federal St., Boston, Mass.	Sept. 11, 1915
Samuel T. Hubbard	Hubbard Bros. & Co. 66 Beaver St., New York City.	Sept. 13, 1906
Gurry E. Huggins	Pres. Beaver Mills 299 Broadway, New York City.	Apr. 30, 1914
Arnold W. Hunnewell	Treas. Nashua Homes Corp. P. O. Box 1302, Boston, Mass.	May 3, 1921
John P. Hsley	N. E. Mgr. Wing & Evans, Inc. 89 State St., Boston, Mass.	Oct. 6, 1921
Robert R. Jenks	Pres. Fales & Jenks Machine Co. 320 Dexter St., Pawtucket, R. I.	Oct. 5, 1922
Arthur R. Johnson	Ridley Watts Co. 44 Leonard St., New York City.	May 1, 1924
Edward M. Johnson	Sec. & Vice Pres. Arnold, Hoffman & Co., Inc. P. O. Box 1376, Providence, R. I.	Apr. 29, 1915
Ernest G. Jones	Cooper & Brush 826 Industrial Trust Bldg., Providence, R. I.	May 5, 1919
William D. Judson	Parker, Wilder & Co. 78 Leonard St., New York City.	Apr. 26, 1917
Alfred E. Jury	United States Rubber Co. 58th St. & 11th Ave., New York City.	Sept. 16, 1916
Lawrence M. Keeler	Agt. Whitin Machine Wks. Whitinsville, Mass.	Sept. 26, 1901
William B. Kehew	29A Chestnut St., Boston, Mass.	Apr. 24, 1895
Frank B. Kenney	Pres. T. C. Entwistle Co. 297 Market St., Lowell, Mass.	Oct. 5, 1899
Nathaniel Kinsman	Choremi, Benachi & Co. of Boston 53 State St., Boston, Mass.	Apr. 25, 1907
Fred S. Klebart	The J. B. Ford Co., Wyandotte, Mich.	Apr. 25, 1912
Richard G. Knowland	Con. Chemical Eng. 88 Broad St., Boston, Mass.	Mar. 7, 1924
Harry W. Knowlton	Pres. Knowlton & Newton Co., Inc. 545 Broadway, Lowell, Mass.	Nov. 1, 1923
L. H. Kunhardt	Vice Pres. Boston Mfrs. Mutual Fire Ins. Co. 185 Franklin St., Boston, Mass.	Oct. 2, 1913
William A. Lamson	Pres. U. S. Mailing Case Co. 42 Church St., Lowell, Mass.	Apr. 27, 1916
Josiah M. Lasell	Whitin Machine Wks., Whitinsville, Mass.	Apr. 24, 1895
James Lawrence	McFadden, Sands & Co. 114 Federal St., Boston, Mass.	Sept. 30, 1914
John S. Lawrence	Lawrence & Co. 89 Franklin St., Boston, Mass.	Apr. 30, 1909



		Elected
John Lawson . . . . .	Pres. Hemphill Co., Pawtucket, R. I. . . . .	Oct. 26, 1918
Ralph Lawson . . . . .	John Malloch & Co. . . . .	Oct. 20, 1917
	4 Liberty Sq., Boston, Mass. . . . .	
J. J. Low . . . . .	E. P. Walker & Co. . . . .	May 1, 1924
	56 Beaver St., New York City. . . . .	
Stephen C. Lowe . . . . .	Pres. S. C. Lowe Supply Co. . . . .	Oct. 25, 1895
	New Bedford, Mass. . . . .	
Joel Irvine Lyle . . . . .	Treas. Carrier Engineering Corp. . . . .	Sept. 16, 1916
	750 Frelinghuysen Ave., Newark, N. J. . . . .	
T. J. Lynch . . . . .	Allis-Chalmers Mfg. Co. . . . .	Sept. 30, 1914
	50 Congress St., Boston, Mass. . . . .	
William B. McBee . . . . .	Pres. & Treas. Blackstone Mutual Fire In- surance Co., P. O. Box 1525, Providence, R. I. . . . .	Aug. 1, 1923
Ralph E. McCausland . . . . .	Barber-Colman Co., Rockford, Ill. . . . .	Apr. 12, 1911
J. Franklin McFadden . . . . .	McFadden, Sands & Co. . . . .	Sept. 13, 1906
	115 Chestnut St., Philadelphia, Pa. . . . .	
William McKinley, Jr. . . . .	W. H. Langley & Co. . . . .	Apr. 29, 1915
	77 Worth St., New York City. . . . .	
Rowland N. Mackay . . . . .	Selling Agt. Stafford Co., Boston, Mass. . . . .	Nov. 1, 1923
Ernest T. Manson . . . . .	Edward H. Best & Co. . . . .	Oct. 2, 1913
	222 Purchase St., Boston, Mass. . . . .	
Edwin H. Marble . . . . .	Pres. Curtis & Marble Machine Co. . . . .	Sept. 13, 1906
	72 Cambridge St., Worcester, Mass. . . . .	
George E. Marble . . . . .	Curtis & Marble Machine Co. . . . .	May 1, 1924
	72 Cambridge St., Worcester, Mass. . . . .	
Henry Marsh . . . . .	Atkinson, Haserick & Co. . . . .	Apr. 30, 1909
	152 Congress St., Boston, Mass. . . . .	
Edward L. Martin . . . . .	Sec. H & B American Machine Co. . . . .	Apr. 25, 1907
	P. O. Box 678, Pawtucket, R. I. . . . .	
Henry W. Mason . . . . .	10 South Water St., Providence, R. I. . . . .	Apr. 27, 1905
Louis J. Matos . . . . .	National Aniline & Chemical Co. . . . .	Apr. 30, 1914
	40 Rector St., New York City. . . . .	
John W. Mayor . . . . .	Thomas Mayor & Son . . . . .	Sept. 30, 1908
	26 Olney St., Providence, R. I. . . . .	
Arthur I. Mellin . . . . .	Managing Editor, TEXTILES . . . . .	May 1, 1924
	1170 Broadway, New York City. . . . .	
John S. Merchant . . . . .	Standard Mill Supply Co. . . . .	Apr. 30, 1914
	P. O. Box 1534, Providence, R. I. . . . .	
John Montgomery . . . . .	Mgr. Woonsocket Machine & Press Co. . . . .	May 3, 1918
	Woonsocket, R. I. . . . .	
Wm. L. Moore . . . . .	Mgr. Alexander Sprunt & Son, Inc. . . . .	Oct. 18, 1923
	89 State St., Boston, Mass. . . . .	
Lindsey Morris . . . . .	The Ballinger Co. . . . .	May 3, 1921
	12th & Chestnut Sts., Philadelphia, Pa. . . . .	
Edward Motley . . . . .	Curtis & Sanger . . . . .	Apr. 29, 1915
	33 Congress St., Boston, Mass. . . . .	
William Muir . . . . .	12 East Ave., Pawtucket, R. I. . . . .	Sept. 17, 1910
James Munro, Jr. . . . .	% J. H. Hanaford, 89 State St., Boston, Mass. . . . .	Oct. 5, 1920
Wilfred C. Murphy . . . . .	Pres. & Treas. Providence Mill Supply Co. . . . .	Mar. 2, 1923
	68 West Exchange St., Providence, R. I. . . . .	
Robert E. Naumburg . . . . .	Mech. Eng. Saco-Lowell Shops, Lowell, Mass. . . . .	Apr. 6, 1923
Joseph Newburger . . . . .	Newburger Cotton Co. . . . .	Sept. 11, 1915
	912 Falls Bldg., Memphis, Tenn. . . . .	
Samuel Newburger . . . . .	Samuel Newburger & Co. . . . .	May 4, 1920
	59 Pearl St., New York City. . . . .	
A. W. Newell . . . . .	Sec. Hazard Cotton Co. . . . .	May 5, 1919
	P. O. Box 1394, Providence, R. I. . . . .	
P. Stewart Newton . . . . .	Wm. Anagnosti & Co. . . . .	Oct. 5, 1923
	30 State St., Boston, Mass. . . . .	

		Elected
Burt F. Nichols	The Chemical National Bank 270 Broadway, New York City.	Dec. 5, 1918
Rodman A. Nichols	Nichols & Read, 73 Water St., Boston, Mass.	May 3, 1918
W. A. Nivling	Huron Milling Co. 73 Tremont St., Boston, Mass.	May 4, 1920
William R. Noone	Joseph Noone's Sons Co. 105 Washington St., Boston, Mass.	Oct. 28, 1897
Arthur L. Norton	Special Products Co. 261 Franklin St., Boston, Mass.	June 19, 1919
William H. Nye	Turner Construction Co. 178 Tremont St., Boston, Mass.	July 23, 1919
Dana Osgood	Sec. Draper Corp., Hopedale, Mass.	Apr. 26, 1917
Edward E. Palmer	General Electric Co. 84 State St., Boston, Mass.	June 2, 1922
Clifton D. Park	Sales Engineer, Parks-Cramer Co. 1102 Old South Bldg., Boston, Mass.	Oct. 29, 1918
C. C. Payson	Clark, Payson & Co. 19 Pearl St., Boston, Mass.	Sept. 30, 1914
Gilbert V. Pennock	Eustis, Pennock & Co. P. O. Box 1453, Boston, Mass.	Sept. 11, 1915
Charles P. Raymond	C. P. Raymond Agency, Inc. 294 Washington St., Boston, Mass.	Apr. 29, 1915
George A. Rivinius	G. A. Rivinius & Co. 53 State St., Boston, Mass.	Jan. 11, 1924
Leon B. Rogers	Treas. Rogers Fibre Co. 121 Beach St., Boston, Mass.	Oct. 19, 1917
Henry W. Roth	121 Chestnut St., Philadelphia, Pa.	Sept. 11, 1915
Frank E. Rowe, Jr.	Selling Agt., Saco-Lowell Shops 1 Federal St., Boston, Mass.	Apr. 24, 1923
E. A. Rusden	Gen. Mgr. The Textile-Finishing Machinery Co., 85 Exchange Pl., Providence, R. I.	Sept. 21, 1905
George W. St. Amant	141 Milk St., Boston, Mass.	Oct. 4, 1907
Joseph St. Mary	930 Gravier St., New Orleans, La.	Apr. 27, 1916
Harold A. Sands	McFadden, Sands & Co. 115 Chestnut St., Philadelphia, Pa.	Apr. 29, 1915
David C. Scott	Henry L. Scott & Co. P. O. Box 963, Providence, R. I.	May 4, 1920
Dwight Seabury	Dwight Seabury Co. 12 East Ave., Pawtucket, R. I.	Apr. 25, 1901
Arthur N. Sheldon	F. P. Sheldon & Son 1009 Hospital Trust Bldg., Providence, R. I.	Sept. 13, 1906
Frederick S. Sibley	Vice Pres. R. I. Hospital Trust Co. 15 Westminster St., Providence, R. I.	Apr. 24, 1923
Abbott M. Smith	Mgr. Henshaw & Sanders, Inc. P. O. Box 377, New Bedford, Mass.	Apr. 24, 1923
Abbott P. Smith	791 Purchase St., New Bedford, Mass.	Sept. 13, 1906
Alphonso H. Smith	Prop. Slocum & Killburn 23-27 No. Water St., New Bedford, Mass.	Apr. 6, 1923
Joseph J. Smith	Firth-Smith Co. P. O. Box 5114, Boston, Mass.	Sept. 11, 1912
Robert P. Smith	Smith, Drum & Co. Alleghany Ave. & 5th St., Philadelphia, Pa.	Apr. 24, 1923
R. Paul Snelling	Saco-Lowell Shops 1 Federal St., Boston, Mass.	Sept. 22, 1896
Ernest W. Soucy	Selling Agt. Saco-Lowell Shops 1 Federal St., Boston, Mass.	Apr. 6, 1923
Henry C. Spence	Gen. Mgr. Metallic Drawing Roll Co. Indian Orchard, Mass.	Apr. 24, 1895

Elected

George F. Steele . . .	Dist. Mgr. P. & M. Dept., General Electric Co., 84 State St., Boston, Mass.	Sept. 17, 1910
Wallace I. Stimpson . . .	Agt. Draper Corp., Hopedale, Mass.	Sept. 21, 1905
John A. Stitt . . .	Pres. Babbitt Steam Specialty Co., 57 So. Water St., New Bedford, Mass.	Sept. 7, 1923
James Strang . . .	Saco-Lowell Shops, 1 Federal St., Boston, Mass.	Oct. 28, 1897
Charles F. Taylor . . .	57 Weybosset St., Providence, R. I.	Apr. 27, 1898
Fred Taylor . . .	Purchasing Dept. Firestone Tire & Rubber Co., Akron, Ohio.	June 29, 1920
Gay D. Thayer . . .	Crompton & Knowles Loom Wks., Worcester, Mass.	Apr. 25, 1907
Nathaniel N. Thayer . . .	Barry, Thayer & Co., 30 Kilby St., Boston, Mass.	Apr. 13, 1911
J. Henry Thorpe . . .	Sales Agt. U. S. Bobbin & Shuttle Co., 57 Eddy St., Providence, R. I.	Apr. 25, 1912
Edward P. Walker . . .	E. P. Walker & Co., 60 Beaver St., New York City.	Apr. 29, 1915
James J. Walsh . . .	S. D. Bush & Co., 153 Milk St., Boston, Mass.	June 1, 1923
Edward A. Warren . . .	Agt. Universal Winding Co., Sharon, Mass.	Oct. 20, 1917
Clifton E. Watson . . .	Mgr. The J. H. Williams Co., Millbury, Mass.	Feb. 2, 1923
A. Roy Welton . . .	140 Woodland St., Lawrence, Mass.	May 1, 1924
Philip C. Wentworth . . .	Treas. National Ring Traveler Co., 257 West Exchange St., Providence, R. I.	May 3, 1921
Capt. Wm. P. White . . .	Lowell Paper Tube Corp., P. O. Box 1239, Lowell, Mass.	Sept. 21, 1914
W. W. White . . .	Mgr. Worcester Shop, Holyoke Machine Co., Worcester, Mass.	Apr. 27, 1899
Malcolm D. Whitman . . .	William Whitman Co., Inc., 25 Madison Ave., New York City.	Apr. 25, 1912
Richard E. Williams . . .	Pres. The Commercial Co. of Egypt, 40 Central St., Boston, Mass.	Oct. 29, 1918
J. H. Windle . . .	Selling Agt. Fales & Jenks Machine Co., Pawtucket, R. I.	Oct. 5, 1920
Walter James Wixon . . .	Treas. Sterling Ring Traveler Co., 101 Lindsey St., Fall River, Mass.	Nov. 10, 1922
Erving Y. Woolley . . .	Lee, Higginson & Co., 44 State St., Boston, Mass.	Apr. 6, 1923

## TECHNICAL MEMBERS

Henry K. Dick . . .	In Charge Mfg., Textile Sec., U. S. Rubber Co., 122 Adams St., Newark, N. J.	July 15, 1922
Boutwell H. Foster . . .	In Charge Research, U. S. Rubber Co., 122 Adams St., Newark, N. J.	July 15, 1922
Wardwell C. Leonard . . .	Nashawena Mills, New Bedford, Mass.	Mar. 2, 1923

## RECAPITULATION OF MEMBERSHIP

## BY CLASSES

Honorary members . . . . .	4
Life members . . . . .	33
Active members . . . . .	597
Associate members . . . . .	201
Technical members . . . . .	3
	<hr/>
Sustaining members . . . . .	838
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Total . . . . .	1,607

# HONORARY, LIFE, ACTIVE, ASSOCIATE AND TECHNICAL MEMBERS

## ARRANGED BY STATES AND COUNTRIES

### ALABAMA

Anniston . . .	Gerald L. Chapman . . .	Woodstock Cotton Mills
Pell City . . .	T. H. Rennie . . .	Avondale Mill

### CALIFORNIA

Los Angeles . . .	Charles H. Fish . . .	Imperial Cotton Mills Co.
Los Angeles . . .	Lindsay S. Hall . . .	Goodyear Textile Mills
Oakland . . .	J. R. Millar . . .	California Cotton Mills Co.

### CONNECTICUT

Baltic . . .	William H. Buckley . . .	The Baltic Mills Co.
Bristol . . .	John T. Chidsey . . .	The Root Co.
Danielson . . .	Obadiah Butler . . .	Connecticut Cotton Mills
Goodyear . . .	Charles W. Young . . .	Goodyear Cotton Mills, Inc.
Jewett City . . .	Lewis M. Carpenter . . .	Ashland Cotton Co.
Middletown . . .	Joseph Merriam . . .	Springfield Webbing Co.
Middletown . . .	Townsend Palmer . . .	I. E. Palmer Co.
Moosup . . .	Lucius B. Cranska . . .	Cranska Thread Co.
Moosup . . .	Harry Richardson . . .	Aldrich Bros. Co.
Moosup . . .	Thomas J. Seaton . . .	The Floyd Cranska Co.
New Haven . . .	George S. Barnum . . .	The Bigelow Co.
New Milford . . .	William H. Robertson . . .	The Robertson Bleachery & Dye Wks., Inc.
No. Grosvenor-Dale	John F. Reardon . . .	Grosvenor-Dale Co.
Norwich . . .	John T. Almy . . .	Attawaugan Co.
Norwich . . .	Grosvenor Ely . . .	Ashland Cotton Co.
Norwich . . .	Cyrus Woodman . . .	Attawaugan Co.
Plainfield . . .	Samuel T. Butterworth . . .	The Lawton Mills Corp.
Plainfield . . .	Charles F. Heap . . .	The Lawton Mills Corp.
Plainfield . . .	John Porteous . . .	The Lawton Mills Corp.
Sterling . . .	Harold Mowry . . .	U. S. Finishing Co.
Taftville . . .	Joseph D. Aiken . . .	Ponemah Mills
Taftville . . .	A. E. Pingree . . .	Ponemah Mills
Voluntown . . .	George T. Briggs . . .	The Briggs Mfg. Co.
Waterbury . . .	Archer J. Smith . . .	The American Mills Co.
Wauregan . . .	Francis D. Harrower . . .	The Wauregan Co.
Wauregan . . .	C. M. Robinson . . .	The Wauregan Co.
Wauregan . . .	Charles B. Wiggin . . .	The Wauregan Co.
Willimantic . . .	Walter B. Knight . . .	Quidnick-Windham Mfg. Co.
Willimantic . . .	Frank H. Tift . . .	R. F. D. No. 2
Windsor Locks . . .	George M. Montgomery . . .	The J. R. Montgomery Co.
Windsor Locks . . .	J. R. Montgomery . . .	The J. R. Montgomery Co.

### DELAWARE

Wilmington . . .	Colin C. Bell . . .	National Vulcanized Fibre Co.
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### DISTRICT OF COLUMBIA

Washington . . .	Frank R. McGowan . . .	Dept. of Commerce
Washington . . .	John Wingate Weeks . . .	2100 Sixteenth St.

## GEORGIA

Atlanta . . .	Oscar Elsas . . .	Fulton Bag & Cotton Mills
Atlanta . . .	Alex. Fergusson Macintyre . . .	Fulton Bag & Cotton Mills
Augusta . . .	George R. Stearns . . .	Riverside Mills
Chattahoochee . . .	W. R. B. Whittier . . .	Whittier Mills
Columbus . . .	Frederick B. Gordon . . .	Columbus Mfg. Co.
Columbus . . .	J. D. Massey . . .	Eagle & Phenix Mills
Griffin . . .	William G. Nichols . . .	Griffin Mfg. Co.
La Grange . . .	Fuller E. Callaway . . .	Manchester Cotton Mills
Macon . . .	William D. Anderson . . .	Bibb Mfg. Co.
Macon . . .	Edward T. Comer . . .	Bibb Mfg. Co.

## ILLINOIS

Aurora . . .	Ernest S. Hobbs . . .	Aurora Cotton Mills
Rockford . . .	Howard D. Colman . . .	Barber-Colman Co.
Rockford . . .	Ralph E. McCausland . . .	Barber-Colman Co.

## INDIANA

Cannelton . . .	Lee Rodman . . .	Indiana Cotton Mills
Evansville . . .	Charles N. Brown . . .	The Lincoln Cotton Mill Co.

## KENTUCKY

Louisville . . .	Philip S. Tuley . . .	Louisville Cotton Mills Co.
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## LOUISIANA

New Orleans . . .	Edward B. Benjamin . . .	E. V. Benjamin & Co.
New Orleans . . .	S. Odenheimer . . .	Lane Cotton Mills Co.
New Orleans . . .	Joseph St. Mary . . .	930 Gravier St.

## MAINE

Augusta . . .	Milton O. Dean . . .	Edwards Mfg. Co.
Biddeford . . .	Edmund E. Blake . . .	Saco-Lowell Shops
Biddeford . . .	E. Payson Gibbs . . .	Pepperell Mfg. Co.
Brunswick . . .	William Worsnop . . .	Cabot Mfg. Co.
Lewiston . . .	Gilbert D. Harrison . . .	Lewiston Bleachery & Dye Works
Lewiston . . .	James E. Coburn . . .	Androscoggin Mills
Lewiston . . .	Geo. H. Estes . . .	Continental Mills
Lewiston . . .	W. Scott Libbey . . .	W. S. Libbey Co.
Lewiston . . .	Nathaniel M. Mitchell . . .	Hill Mfg. Co.
Lewiston . . .	Samuel Stewart . . .	Bates Mfg. Co.
Lewiston . . .	Frederick E. Wagg . . .	Hill Mfg. Co.
Saco . . .	Ernest L. Morrill . . .	Pepperell Mfg. Co.
Waterville . . .	William W. Quinton . . .	Lockwood Co.
Westbrook . . .	Luther Dana . . .	Dana Warp Mills
Westbrook . . .	Philip Dana . . .	Dana Warp Mills
West Kennebunk . . .	W. K. Sanborn . . .	American Net & Twine Co.
Yarmouth . . .	Henry T. Haley . . .	Royal River Mfg. & Pwr. Co.

## MARYLAND

Baltimore . . .	Howard Baetjer . . .	Mt. Vernon - Woodberry Mills
Baltimore . . .	Alfred H. Burnham . . .	P. O. Box 202, Sta. F
Baltimore . . .	E. Stanley Gary . . .	Gary Mfg. Co.
Baltimore . . .	James P. Hooper . . .	Wm. E. Hooper & Sons Co.
Baltimore . . .	Allan McNab, Jr. . . .	Mt. Vernon - Woodberry Mills

## MASSACHUSETTS

Adams . . . . .	George B. Adams . . . . .	Adams Bros. Mfg. Co.
Adams . . . . .	Alexander T. Herron . . . . .	Renfrew Mfg. Co.
Adams . . . . .	W. R. L. McBee . . . . .	Berkshire Cotton Mfg. Co.
Adams . . . . .	Charles T. Plunkett . . . . .	Berkshire Cotton Mfg. Co.
Adams . . . . .	Joseph Roberts . . . . .	Renfrew Mfg. Co.
Adams . . . . .	Francis U. Stearns . . . . .	Renfrew Mfg. Co.
Adams . . . . .	Wallace E. Stoddard . . . . .	Berkshire Cotton Mfg. Co.
Adams . . . . .	Gilbert T. Thompson . . . . .	Berkshire Cotton Mfg. Co.
Adams . . . . .	Carl T. Tourtellot . . . . .	Renfrew Mfg. Co.
Barrowsville . . . . .	John F. Bannon . . . . .	Mansfield Bleachery
Bondsville . . . . .	Elmer G. Childs . . . . .	Boston Duck Co.
Bondsville . . . . .	Frank S. Gordon . . . . .	Boston Duck Co.
Bondsville . . . . .	Benjamin C. Shaw . . . . .	Boston Duck Co.
Boston . . . . .	Will B. Anderson . . . . .	Barber-Colman Co.
Boston . . . . .	Eugen C. Andres . . . . .	Eugen C. Andres Co.
Boston . . . . .	Frederick H. Andres . . . . .	Frederick H. Andres, Inc.
Boston . . . . .	E. W. Atkinson . . . . .	Atkinson, Haserick & Co.
Boston . . . . .	Frederick E. Atteaux . . . . .	F. E. Atteaux & Co., Inc.
Boston . . . . .	Frederick Ayer . . . . .	Tremont & Suffolk Mills
Boston . . . . .	Nathaniel F. Ayer . . . . .	Nyanza Mills
Boston . . . . .	Harry L. Bailey . . . . .	Wellington, Sears & Co.
Boston . . . . .	Walter C. Ballard . . . . .	Katama Mills
Boston . . . . .	Joel M. Barnes . . . . .	Harpham, Barnes, Stevenson & Coe, Inc.
Boston . . . . .	Walter C. Baylies . . . . .	Amory, Browne & Co.
Boston . . . . .	W. DeFord Beal . . . . .	Cooper & Brush
Boston . . . . .	Albert Farwell Bemis . . . . .	Bemis Bro. Bag Co.
Boston . . . . .	E. Howard Bennett . . . . .	American W. & C. Reporter
Boston . . . . .	Henry Newhall Berry . . . . .	Richmond Lace Wks.
Boston . . . . .	Edward H. Best . . . . .	Edward H. Best & Co.
Boston . . . . .	Frederick H. Bishop . . . . .	Universal Winding Co.
Boston . . . . .	Francis P. Blake . . . . .	Bay State Belting Co.
Boston . . . . .	Fessenden S. Blanchard . . . . .	Pacific Mills
Boston . . . . .	John Bolinger . . . . .	National Shawmut Bank
Boston . . . . .	Laurence R. Bowler . . . . .	Butler Mill
Boston . . . . .	Garrett D. Bowne, Jr. . . . .	Westinghouse Elec. & Mfg. Co.
Boston . . . . .	George A. Boyd . . . . .	Harmony Mills
Boston . . . . .	Arthur T. Bradlee . . . . .	William Whitman Co., Inc.
Boston . . . . .	Walter H. Bradley . . . . .	Pepperell Mfg. Co.
Boston . . . . .	S. Parker Bremer . . . . .	Parker, Wilder & Co.
Boston . . . . .	W. Irving Bullard . . . . .	The Merchants Nat'l Bank
Boston . . . . .	Charles B. Burleigh . . . . .	General Electric Co.
Boston . . . . .	Arthur Cecil Butler . . . . .	Leigh & Butler
Boston . . . . .	Morgan Butler . . . . .	Butler Mill
Boston . . . . .	William M. Butler . . . . .	Butler Mill
Boston . . . . .	Charles A. Chase . . . . .	General Electric Co.
Boston . . . . .	Thomas J. Clexton . . . . .	A. Klipstein & Co.
Boston . . . . .	Alfred E. Colby . . . . .	Pacific Mills
Boston . . . . .	M. W. Colquhoun . . . . .	Pepperell Mfg. Co.
Boston . . . . .	Frank B. Comins . . . . .	American Moistening Co.
Boston . . . . .	J. L. Coon . . . . .	Atkinson, Haserick & Co.
Boston . . . . .	B. S. Cottrell . . . . .	Parks-Cramer Co.
Boston . . . . .	Leonard W. Cronkhite . . . . .	Leonard W. Cronkhite, Inc.
Boston . . . . .	George C. Cunningham . . . . .	Indian Head Mills of Ala.
Boston . . . . .	Sydney R. David . . . . .	Sydney R. David & Co., Inc.
Boston . . . . .	Edward H. Davis . . . . .	Cotton Research Co.

Boston	P. Y. DeNormandie	Androscoggin Mills
Boston	John S. Dooley	William J. Dooley & Co.
Boston	Howard N. Doughty	Ipswich Mills
Boston	Frederic C. Dumaine	Amoskeag Mfg. Co.
Boston	Albert Greene Duncan	Harmony Mills
Boston	Robert J. Edwards	Bates Manufacturing Co.
Boston	Henry C. Everett, Jr.	Winnshoro Mills
Boston	Francis W. Fabyan	Columbian Mfg. Co.
Boston	Andrew Fisher	102 Pearl St.
Boston	Frederick A. Flather	Boott Mills
Boston	Frank R. Fritz	Nashua Mfg. Co.
Boston	Charles L. Gagnebin	H. A. Metz & Co.
Boston	Gustav William Goerner	Roessler & Hasslacher Chemical Co.
Boston	Wm. H. Goldsmith, Jr.	Saco-Lowell Shops
Boston	Ralph V. Grandison	Hazard Cotton Co.
Boston	Edwin Farnham Greene	Pacific Mills
Boston	Everett A. Greene	Lockwood, Greene & Co.
Boston	F. Hartwell Greene	New England Southern Mills
Boston	S. Harold Greene	New England Southern Mills
Boston	Allan B. Greenough	45 Milk St.
Boston	Frank M. Gunby	Charles T. Main
Boston	Frank J. Hale	Saco-Lowell Shops
Boston	H. Dwight Hall	Boston Mfrs. Mut. F. I. Co.
Boston	John H. Hanaford	89 State St.
Boston	Harold Hansen	Boston Transcript
Boston	Charles L. Harding	Whitman Mills
Boston	Herbert Harrison	John Hetherington & Sons, Ltd.
Boston	Frank Hartley	Frank Hartley & Son
Boston	M. Graeme Haughton	Haughton & Co.
Boston	J. Fred Havey	Saco-Lowell Shops
Boston	Robert F. Herrick	Pacific Mills
Boston	Robert F. Herrick, Jr.	Saco-Lowell Shops
Boston	Edwin D. Hewins	E. D. Hewins, Inc.
Boston	Franklin W. Hobbs	Arlington Mills
Boston	Charles E. Hodges	American Mutual Liability Ins. Co.
Boston	Ernest N. Hood	Monomac Spinning Co.
Boston	Dudley R. Howe	Lockwood, Greene & Co., Mfrs.
Boston	Henry S. Howe	Lawrence & Co.
Boston	James Carleton Howe	Old Colony Trust Co.
Boston	Parkman D. Howe	Saco-Lowell Shops
Boston	Arnold W. Hummwell	Nashua Homes Corp.
Boston	John P. Husley	Wing & Evans, Inc.
Boston	Charles E. Inches	Nyanza Mills
Boston	P. T. Jackson	American Tire Fabric Co.
Boston	Joseph B. Jamieson	Multiple Winding Co.
Boston	William B. Kehew	29A Chestnut St.
Boston	Ahira Baker Kelley	Bemis Bro. Bag Co.
Boston	Henry P. Kendall	Lewis Mfg. Co.
Boston	Nathaniel Kinsman	Choremi, Benachi & Co. of Boston
Boston	Richard G. Knowland	88 Broad St.
Boston	L. H. Kunhardt	Boston Mfrs. Mut. Fire Ins. Co.
Boston	James Lawrence, Jr.	McFadden, Sands & Co.
Boston	John S. Lawrence	Lawrence & Co.
Boston	Ralph Lawson	John Malloch & Co.

Boston	Russell H. Leonard	Ipswich Mills
Boston	Hamilton deF. Lockwood	Bates Mfg. Co.
Boston	Harry D. Lord	Saco-Lowell Shops
Boston	Herbert Lyman	Merrinack Mfg. Co.
Boston	T. J. Lynch	Allis-Chalmers Mfg. Co.
Boston	James McDowell	Sharp Mfg. Co.
Boston	Fred C. McDuffie	Everett Mills
Boston	Rowland N. Mackay	Stafford Co.
Boston	Charles T. Main	201 Devonshire St.
Boston	Ernest T. Manson	Edward H. Best & Co.
Boston	Henry Marsh	Atkinson, Haserick & Co.
Boston	John P. Marston	247 Atlantic Ave.
Boston	Kenneth Moller	Lockwood, Greene & Co., Inc.
Boston	James F. Monaghan	79 Milk St.
Boston	W. F. Moore	Hill Mfg. Co.
Boston	Wm. L. Moore	Alexander Sprunt & Co., Inc.
Boston	Edward Motley	Curtis & Sanger
Boston	James Munro, Jr.	J. H. Hanaford
Boston	Robert W. Neff	22 India Sq.
Boston	P. Stewart Newton	Wm. Anagnosti & Co.
Boston	Henry G. Nichols	Lockwood, Greene & Co., Mgrs.
Boston	Howard S. O. Nichols	Great Falls Mfg. Co.
Boston	Rodman A. Nichols	Nichols & Reed
Boston	Theodore O. Nicholson	79 Milk St.
Boston	W. A. Nivling	Huron Milling Co.
Boston	William R. Noone	Joseph Noone's Sons Co.
Boston	Arthur L. Norton	Special Products Co.
Boston	William H. Nye	Turner Construction Co.
Boston	Charles J. O'Malley	O'Malley Advertising & Selling Co.
Boston	Sidney S. Paine	Cotton Research Co.
Boston	Edward E. Palmer	General Electric Co.
Boston	Clifton D. Park	Parks-Cramer Co.
Boston	J. Earle Parker	Acadia Mills
Boston	Samuel Dunn Parker	Ipswich Mills
Boston	Brackett Parsons	Ipswich Mills
Boston	Winslow A. Parsons	Richmond Lace Wks.
Boston	C. C. Payson	Clark, Payson Co.
Boston	Gilbert V. Pennock	Eustis, Pennock & Co.
Boston	Frederick J. Quinn	Atlas Yarn Co.
Boston	Charles P. Raymond	C. P. Raymond Agency, Inc.
Boston	Charles O. Richardson	Warwick Mills
Boston	Charles E. Riley	H & B American Mach. Co.
Boston	George A. Rivinius	G. A. Rivinius & Co.
Boston	Leon B. Rogers	Rogers Fibre Co.
Boston	Frank E. Rowe, Jr.	Saco-Lowell Shops
Boston	George W. St. Amant	141 Milk St.
Boston	Albert L. Scott	Lockwood, Greene & Co., Inc.
Boston	Joseph J. Smith	Firth-Smith Co.
Boston	R. Paul Snelling	Saco-Lowell Shops
Boston	Ernest W. Soucy	Saco-Lowell Shops
Boston	George F. Steele	General Electric Co.
Boston	Malcolm B. Stone	Ludlow Mfg. Associates
Boston	James Strang	Saco-Lowell Shops
Boston	Daniel L. Taylor	Pacific Mills
Boston	Nathaniel N. Thayer	Barry, Thayer & Co.
Boston	Albert W. Thompson	Parks-Cramer Co.
Boston	Ward Thoron	Merrimack Mfg. Co.



Boston	Philip M. Tucker	Philip M. Tucker Co.
Boston	Robert G. Vickery	Cabot Mfg. Co.
Boston	E. Dean Walen	Cotton Research Co.
Boston	James J. Walsh	S. D. Bush & Co.
Boston	James D. Whitaker	Lola Cotton Mills
Boston	Hendricks H. Whitman	Monomac Spinning Co.
Boston	William Whitman	Nonquitt Spinning Co.
Boston	Jesse S. Wiley	Columbus Mfg. Co.
Boston	Richard Elliot Williams	The Commercial Co. of Egypt
Boston	Robert Winsor	Kidder, Peabody & Co.
Boston	Erving Y. Woolley	Lee, Higginson & Co.
Brookline	Daniel J. Danker	73 Dean Rd.
Brookline	Thomas B. Hitchcock	32 Fuller St.
Brookline	Benjamin Wilcox	269 Kent St.
Cambridge	A. Lawrence Lowell	Harvard College
Chicopee	Louis A. Aumann	Dwight Mfg. Co.
Chicopee Falls	Isaac T. Prosser	Chicopee Mfg. Corp.
Clinton	Arthur R. Dickinson	Lancaster Mills
Clinton	Sammel Greer	Lancaster Mills
Dedham	William H. Gray	Dedham Finishing Co.
Dorchester	Edgar F. Hathaway	Shawmut Engineering Co.
East Boston	Arthur Clinton Swift	Maverick Mills
Easthampton	Alfred Burns	West Boylston Mfg. Co.
Easthampton	G. Arthur Cook	West Boylston Mfg. Co.
East Wareham	Albert E. Smith	New Bedford & Agawam Finishing Co.
Fairhaven	Frederick E. Earle	F. E. Earle Co.
Fairhaven	Henry Tunstall	12 Maple Ave.
Fall River	Henry Ashworth	Ashworth Bros., Inc.
Fall River	Richard Boardman	Barnard Mfg. Co.
Fall River	Charles N. Borden	Richard Borden Mfg. Co.
Fall River	Jefferson Borden, Jr.	Fall River Bleachery
Fall River	Spencer Borden, Jr.	Fall River Bleachery
Fall River	Sydney H. Borden	Durfee Mills
Fall River	Frank A. Brady	Stevens Mfg. Co.
Fall River	Isaac A. Brown	Narragansett Mills
Fall River	Frank L. Carpenter	Davis Mills
Fall River	Charles B. Chase	Stevens Mfg. Co.
Fall River	Simeon B. Chase	King Philip Mills
Fall River	Albion C. Cook	Wampanoag Mills
Fall River	Thomas D. Covell	The Covell & Osborne Co.
Fall River	F. Lincoln Dunlap	Wampanoag Mills
Fall River	Nathan Durfee	American Printing Co.
Fall River	John D. Eddy	Weetamoe Mills
Fall River	Elmer B. Estes	Estes Mill
Fall River	Henry F. Grinnell	Clace Mills
Fall River	William B. Hawes	O. S. Hawes & Bro.
Fall River	Fred L. Hervey	F. L. Hervey & Co.
Fall River	Joseph H. Hindle	American Printing Co.
Fall River	John H. Holt	Luther Mfg. Co.
Fall River	Thomas Hopkinson	Hopkinson Dyeing & Tex- tile Works
Fall River	Herbert H. Horton	1313 Highland Ave.
Fall River	Edward B. Jennings	547 High St.
Fall River	James B. Kerr	American Thread Co.
Fall River	Joseph T. Leach	Durfee Mills
Fall River	Alexander Makepeace	American Printing Co.

Fall River	Herbert H. Marble	Arkwright Mills
Fall River	J. Edward Newton	Barnard Mfg. Co.
Fall River	Henry W. Nichols	Bradford Durfee Textile School
Fall River	James E. Osborn	Merchants Mfg. Co.
Fall River	Robert Place	Flint Mills
Fall River	Richard G. Riley	King Philip Mills
Fall River	W. Frank Shove	Pocasset Mfg. Co.
Fall River	Abbott E. Slade	865 High St.
Fall River	Timothy Sullivan	314 Cory St.
Fall River	Eben C. Willey	110 June St.
Fall River	Walter James Wixon	Sterling Ring Traveler Co.
Fitchburg	Frederick N. Dillon	D. M. Dillon Steam Boiler Works
Fitchburg	George P. Grant, Jr.	Grant Yarn Co.
Fitchburg	George K. Hannah	Parkhill Mfg. Co.
Fitchburg	Arthur H. Lowe	Parkhill Mfg. Co.
Fitchburg	David Lowe	Parkhill Mfg. Co.
Fitchburg	Russell B. Lowe	Parkhill Mfg. Co.
Fitchburg	Albert G. Smith	Grant Yarn Co.
Fitchburg	Walter F. Stiles	Orswell Mills
Fitchburg	Robert S. Wallace	Fitchburg Yarn Co.
Framingham	Bernard F. Merriam	Cordaville Woolen Co.
Franklin	Harry T. Hayward	Forestdale Mfg. Co.
Holyoke	James A. Burke	Lyman Mills
Hopedale	B. H. B. Draper	Draper Corp.
Hopedale	Frank J. Dutcher	Draper Corp.
Hopedale	Dana Osgood	Draper Corp.
Hopedale	Wallace I. Stimpson	Draper Corp.
Housatonic	Theodore Ellis Ramsdell	Monument Mills
Hyde Park	Eugene N. Foss	B. F. Sturtevant Co.
Indian Orchard	Morgan G. Day	Indian Orchard Co.
Indian Orchard	William C. Godfrey	Indian Orchard Co.
Indian Orchard	Henry C. Spence	Metallic Drawing Roll Co.
Ipswich	Francis Jarvis Cartledge	Ipswich Mills
Ipswich	Leonard Kleebe, Jr.	Ipswich Mills
Ipswich	Frederick K. Smith	Ipswich Mills
Lawrence	William L. Barrell	Lawrence Duck Co.
Lawrence	Joseph W. Booth	The Geo. E. Kunhardt Corp.
Lawrence	George G. Brown	The David Brown Co.
Lawrence	Walter M. Hastings	Monomac Spinning Co.
Lawrence	John T. Lord	Pacific Mills
Lawrence	Charles D. McDuffie	Everett Mills
Lawrence	Walter E. Parker	Pacific Mills
Lawrence	William A. Pedler	Acadia Mills
Lawrence	Robert A. S. Reoch	Pacific Mills
Lawrence	Irving Southworth	Pacific Mills
Lawrence	Havila B. Taylor	Pacific Mills
Lawrence	William D. Twiss	Everett Mills
Lawrence	A. Roy Welton	140 Woodland St.
Lawrence	Harry Wyde	979 Essex St.
Linwood	Amos G. Maddox	Linwood Cotton Mill
Lowell	Elmer L. Bowen	Appleton Co.
Lowell	Edward N. Burke	216 Nesmith St.
Lowell	Josiah Butler	Shaw Stocking Company
Lowell	Avery B. Clark	Merrimack Mfg. Co.
Lowell	Joseph L. Cushing	Daniel Cushing & Co.
Lowell	Charles H. Eames	Lowell Textile School
Lowell	Frederick Flather	Boott Mills

Lowell	John Rogers Flather	Boott Mills
Lowell	Edward T. Gilman	363 Bridge Street
Lowell	Percy Gulline	Columbia Textile Co.
Lowell	William E. Hall	365 Wilder St.
Lowell	Benjamin Holgate	Boott Mills
Lowell	Woodbury K. Howe	Merrimack Mfg. Co.
Lowell	Frank B. Kenney	T. C. Entwistle Co.
Lowell	Harry W. Knowlton	Knowlton & Newton Co., Inc.
Lowell	William A. Lamson	U. S. Mailing Case Co.
Lowell	Albert D. Milliken	Hamilton Mfg. Co.
Lowell	Wm. A. Mitchell	80 Mansur St.
Lowell	Albert H. Morton	95 Harvard St.
Lowell	Robert E. Naumburg	Saco-Lowell Shops
Lowell	Franklin Nourse	187 Nesmith St.
Lowell	M. A. Rawlinson	Tremont & Suffolk Mills
Lowell	Arthur Truman Safford	66 Broadway
Lowell	Ernest E. Shelters	Tremont & Suffolk Mills
Lowell	John A. Stevens	8 Merrimack St.
Lowell	Parker Tuck	Universal Textile Corp.
Lowell	Jude C. Wadleigh	Merrimack Mfg. Co.
Lowell	Capt. William P. White	Lowell Paper Tube Corp.
Methuen	Charles E. Collins	Methuen Co.
Methuen	William D. Hartshorne	40 Pleasant St.
Methuen	Alfred Sagar	Bolton Worsted Mills, Inc.
Millbury	Fred W. Moore	Lock Drawer 550
Millbury	H. Stewart Redman	Cordis Mills
Millbury	Clifton E. Watson	The J. H. Williams Co.
New Bedford	Charles S. Ashley, Jr.	Charles S. Ashley & Sons
New Bedford	George A. Ayer	3 Morgan Terrace
New Bedford	Isaac N. Babbitt	Babbitt Steam Specialty Co.
New Bedford	Joseph W. Bailey	Butler Mill
New Bedford	Allan Barrows	420 Acushnet Ave.
New Bedford	Lyman C. Bauldry	The Pairpoint Corp.
New Bedford	Thomas Bradbury	Wamsutta Mills
New Bedford	Charles F. Broughton	Wamsutta Mills
New Bedford	Charles Edward Buckley	Gosnold Mills Co.
New Bedford	John L. Burton	Nashawena Mills
New Bedford	Edward H. Cook	Quisset Mill
New Bedford	Arthur D. Delano	Manufacturers' Supply Co.
New Bedford	John Duff	David Duff & Son
New Bedford	Arthur L. Emery	Wamsutta Mills
New Bedford	Arnold C. Gardner	Manomet Mills
New Bedford	William B. Gardner	Nashawena Mills
New Bedford	Thomas F. Glennon	Quisset Mill
New Bedford	Walter B. Hall	Whitman Mills
New Bedford	Fred L. Heyes	Nonquitt Spinning Co.
New Bedford	Clark W. Holcomb	New Bedford Boiler & Machine Co.
New Bedford	Charles M. Holmes	Holmes Mfg. Co.
New Bedford	Harold D. Holmes	Gosnold Mills Co.
New Bedford	Harry E. Houghton	Dartmouth Mfg. Co.
New Bedford	Weston Howland	Gosnold Mills Co.
New Bedford	Joseph T. Kenney	Sharp Mfg. Co.
New Bedford	William E. Kern, Jr.	Taber Mill
New Bedford	John T. Kirk	Nashawena Mills
New Bedford	Jesse A. Knight	Manomet Mills
New Bedford	Leonard C. Lapham	Nonquitt Spinning Co.
New Bedford	Wardwell C. Leonard	Nashawena Mills
New Bedford	Stephen C. Lowe	S. C. Lowe Supply Co.

New Bedford	Bernard F. McCarty	Manomet Mills
New Bedford	Frederick H. McDevitt	Soule Mill
New Bedford	Robert C. McFadden	Whitman Mills
New Bedford	Frederick B. Macy	Frederick B. Macy & Co.
New Bedford	Albert G. Mason	Whitman Mills
New Bedford	Leonard H. Mellor	National Spun Silk Co.
New Bedford	Frank I. Neild	Neild Mfg. Corp.
New Bedford	John Neild	Neild Mfg. Corp.
New Bedford	Ralph C. Perkins	Stephen M. Weld & Co.
New Bedford	Albert R. Pierce	Pierce Mfg. Corp.
New Bedford	Andrew G. Pierce, Jr.	Pierce Mfg. Corp.
New Bedford	Andrew Raeburn	New Bedford Cot. Mfrs. Assn.
New Bedford	Charles H. Robbins	Manomet Mills
New Bedford	Luke H. Rooney	Manomet Mills
New Bedford	Robert Schofield	Sharp Mfg. Co.
New Bedford	Abbott M. Smith	Henshaw & Sanders, Inc.
New Bedford	Abbott P. Smith	791 Purchase St.
New Bedford	Alphonso H. Smith	Slocum & Kilburn
New Bedford	William Smith	New Bedford Textile School
New Bedford	George Sneddon	Grinnell Mfg. Corp.
New Bedford	Rufus A. Soule, Jr.	Soule Mill
New Bedford	Fred W. Steele	Booth Mfg. Co.
New Bedford	John A. Stitt	Babbitt Steam Specialty Co.
New Bedford	John B. Strongman	City Mfg. Co.
New Bedford	James A. Sullivan	Taber Mill
New Bedford	John Sullivan	Taber Mill
New Bedford	Frederic Taber	Taber Mill
New Bedford	Samuel Taylor	Bristol Mfg. Co.
New Bedford	James O. Thompson, Jr.	New Bedford Cotton Mills Corp.
New Bedford	James Thomson	P. O. Box 820
New Bedford	Walter H. Underdown	New Bedford Cotton Mills Corp.
New Bedford	Jack Walmsley	Manomet Mills
New Bedford	Joseph W. Webster	Grinnell Mfg. Corp.
New Bedford	William R. West	1886 Purchase St.
New Bedford	Samuel F. Winsper	City Mfg. Corp.
Newburyport	W. Sanford Woodbury	24 High St.
Newton	Langdon Coffin	Samson Cordage Wks.
Newton	Samuel Hyslop	Saxony Worsted Mills
Newton	Benjamin G. Rae	Futurity Thread Co.
Newton Centre	Robert Burgess	90 Sumner St.
North Adams	E. H. Arnold	Greylock Mills
North Adams	Henry C. Dresser	Beaver Mills
North Adams	William Arthur Gallup	Arnold Print Wks.
North Adams	William K. Greer	Hoosac Cotton Mills
North Adams	J. R. Killian	Beaver Mills
Northampton	Morris L. Comey	West Boylston Mfg. Co.
Northampton	John Skinner	60 Harrison Ave.
North Andover	Wallace B. Coates, Jr.	Farwell Bleachery
North Andover	George W. Towne	62 Salem St.
Northbridge	Archibald W. Couper	Paul Whitin Mfg. Co.
Northbridge	Henry T. Whitin	Paul Whitin Mfg. Co.
Northbridge	Paul Whitin	Paul Whitin Mfg. Co.
North Dighton	Joseph K. Milliken	Mt. Hope Finishing Co.
North Dighton	Walter S. Williams	Mt. Hope Finishing Co.
North Oxford	Edwin N. Bartlett	The Edwin Bartlett Co.
North Uxbridge	James Earl Whitin	James Whitin, Inc.
Salem	Lewis F. Allen	Dinsmore Mfg. Co.
Salem	William D. Phillips	Naumkeag Steam Cotton Co.

Salem . . . .	Nathaniel G. Simonds . . . .	Naumkeag Steam Cotton Co.
Salem . . . .	J. Foster Smith . . . .	Naumkeag Steam Cotton Co.
Sharon . . . .	Edward A. Warren . . . .	Universal Winding Co.
Shattuckville . . . .	Frank S. Field . . . .	Massaemet Yarn Mills
Shirley . . . .	Edward S. Pratt . . . .	Samson Cordage Wks.
Somerville . . . .	George L. Gilmore . . . .	K. M. Gilmore & Co.
South Boston . . . .	Robert Bishop . . . .	Robert Bishop Mfg. Co.
Southbridge . . . .	Raymond A. Rice . . . .	Southbridge Printing Co.
Springfield . . . .	Harry B. Hopson . . . .	Green & Hopson
Stoughton . . . .	Frederic W. Reynolds . . . .	25 Walnut St.
Taunton . . . .	Charles R. Blake . . . .	19 Harrison St.
Taunton . . . .	Peter H. Corr . . . .	Greenwich Bleachery
Taunton . . . .	Thomas G. Cox . . . .	Mason Machine Wks.
Taunton . . . .	William M. Lovering . . . .	Taunton Bleach. & Dye Wks.
Taunton . . . .	F. W. Nichols, Jr. . . .	Nobska Spinning Co.
Thorndike . . . .	Charles A. Tabor . . . .	Thorndike Co.
Three Rivers . . . .	Frederick A. Upham . . . .	Otis Co.
Turners Falls . . . .	William Ferrier, Jr. . . .	Griswoldville Mfg. Co.
Ware . . . .	George E. Tucker . . . .	Otis Co.
Westfield . . . .	E. T. Fowler . . . .	Foster Machine Co.
West Newton . . . .	Frederick T. Walsh . . . .	12 Valentine St.
West Warren . . . .	Vernon C. Faunce . . . .	Warren Cotton Mills
Whitinsville . . . .	Stuart F. Brown . . . .	Whitinsville Spin. Ring Co.
Whitinsville . . . .	James A. Cooper . . . .	Whitin Machine Wks.
Whitinsville . . . .	Edwin D. Hague . . . .	Whitin Machine Wks.
Whitinsville . . . .	Lawrence M. Keeler . . . .	Whitin Machine Wks.
Whitinsville . . . .	Josiah M. Lasell . . . .	Whitin Machine Wks.
Whitinsville . . . .	Arthur F. Whitin . . . .	Saunders Cotton Mills
Williamstown . . . .	John Schofield Boyd . . . .	John S. Boyd Co.
Williamstown . . . .	Richard Cowell . . . .	Greylock Mills
Winchendon . . . .	Nelson D. White . . . .	N. D. White & Sons, Inc.
Winchester . . . .	Arthur T. Downer . . . .	The Winchester Laun., Inc.
Winchester . . . .	Paul C. Wilde . . . .	Middlesex Bleach., Dye & Prt. Wks.
Worcester . . . .	Fred C. Bryant . . . .	Curtis & Marble Machine Co.
Worcester . . . .	Edwin H. Marble . . . .	Curtis & Marble Machine Co.
Worcester . . . .	George E. Marble . . . .	Curtis & Marble Machine Co.
Worcester . . . .	George I. Rockwood . . . .	Rockwood Sprinkler Co.
Worcester . . . .	Gay D. Thayer . . . .	Crompton & Knowles Loom Wks.
Worcester . . . .	W. W. White . . . .	Holyoke Machine Co.

## MICHIGAN

Wyandotte . . . .	Fred S. Klebart . . . .	The J. B. Ford Co.
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## NEW HAMPSHIRE

Claremont . . . .	George A. Tenney . . . .	Monadnock Mills
Dover . . . .	Henry Arthur Newton . . . .	Pacific Mills
Exeter . . . .	Marcus J. Woodrow . . . .	Exeter Mfg. Co.
Greenville . . . .	Frederick W. Ely . . . .	Columbian Mfg. Co.
Manchester . . . .	Winthrop Parker . . . .	Amoskeag Mfg. Co.
Manchester . . . .	Howard I. Russell . . . .	Amoskeag Mfg. Co.
Manchester . . . .	Herman F. Straw . . . .	Amoskeag Mfg. Co.
Manchester . . . .	William Parker Straw . . . .	Amoskeag Mfg. Co.

Nashua . . . . .	William H. Cadwell . . . . .	Nashua Mfg. Co.
Nashua . . . . .	Roscoe S. Milliken . . . . .	Nashua Mfg. Co.
Nashua . . . . .	Norman T. Thomas . . . . .	Nashua Mfg. Co.
Nashua . . . . .	Walter Whipple . . . . .	Nashua Mfg. Co.
Newmarket . . . . .	Walter B. Gallant . . . . .	Newmarket Mfg. Co.
Penacook . . . . .	George W. Rooney . . . . .	New Hampshire Spinning Mills
Penacook . . . . .	Fred E. Wattles . . . . .	New Hampshire Spinning Mills
Peterboro . . . . .	A. Erland Goyette . . . . .	Joseph Noone's Sons Co.
Peterboro . . . . .	Albert W. Noone . . . . .	Joseph Noone's Sons Co.
Somersworth . . . . .	Henry C. Harden . . . . .	Great Falls Mfg. Co.
Suncook . . . . .	George E. Prest . . . . .	Suncook Mills
Suncook . . . . .	Hervey Burnham . . . . .	P. O. Box 148
Suncook . . . . .	James Schofield . . . . .	Box 601

## NEW JERSEY

Fairview . . . . .	Benjamin I. Ward . . . . .	Bellman Brook Bleachery Co.
Jersey City . . . . .	Hermann Seydel . . . . .	Seydel Chemical Co.
Newark . . . . .	Kenneth B. Cook . . . . .	U. S. Rubber Co.
Newark . . . . .	Henry K. Dick . . . . .	U. S. Rubber Co.
Newark . . . . .	Boutwell H. Foster . . . . .	U. S. Rubber Co.
Newark . . . . .	William H. Loftus . . . . .	The Clark Thread Co.
Newark . . . . .	Joel Irvine Lyle . . . . .	Carriers Engineering Corp.
New Brunswick . . . . .	William H. Ritter . . . . .	Chicopee Mfg. Corp.
Passaic . . . . .	J. E. Farrell . . . . .	American Cotton Fabric Corp.
Passaic . . . . .	Timothy J. Kelly . . . . .	Brighton Mills
Passaic . . . . .	William L. Lyall . . . . .	Brighton Mills
Passaic . . . . .	Chas. S. Underwood . . . . .	American Cotton Fabric Corp.
Paterson . . . . .	Benjamin Eastwood . . . . .	Benjamin Eastwood Co.
Paterson . . . . .	John W. Ferguson . . . . .	152 Market St.
Plainfield . . . . .	Wm. M. Vermilye . . . . .	930 Madison Ave.
Phillipsburg . . . . .	James F. MacEureo . . . . .	54 Wilson St.
Trenton . . . . .	Edward C. Stokes . . . . .	P. O. Box 131

## NEW YORK

Amsterdam . . . . .	Pardon B. Sanford . . . . .	Chalmers Knitting Co.
Brooklyn . . . . .	Franklin H. Filley . . . . .	American Mfg. Co.
Cohoes . . . . .	James Garvin . . . . .	Harmony Mills
Cohoes . . . . .	John A. Perkins . . . . .	Harmony Mills
Cohoes . . . . .	J. Henry Perkins . . . . .	2 Johnson Ave.
Cohoes . . . . .	Winthrop E. Steinbach . . . . .	26 Imperial Ave.
Cohoes . . . . .	James W. Taylor . . . . .	Fuld & Hatch Knitting Co.
Cohoes . . . . .	Emerson B. Tift . . . . .	Harmony Mills
Elmira . . . . .	J. C. Ferguson . . . . .	Eclipse Textile Co., Inc.
Jamestown . . . . .	Henry Kay Smith . . . . .	500 East 6th St.
Jamestown . . . . .	Thomas Henry Smith . . . . .	56 Center St.
New York City . . . . .	Robert J. Adams . . . . .	Adams Mfg. Co.
New York City . . . . .	Allan W. Ames . . . . .	Bankers Trust Co.
New York City . . . . .	Joshua D. Armitage . . . . .	Taylor, Armitage & Eagles, Inc.
New York City . . . . .	Edwin H. Baker . . . . .	West, Baker & Co.
New York City . . . . .	John Bancroft, Jr. . . . .	Jos. Bancroft Sons Co.
New York City . . . . .	Walwin Barr . . . . .	American Bleached Goods Co.
New York City . . . . .	C. C. Bassett, Jr. . . . .	The Viscose Co.
New York City . . . . .	Bertram H. Borden . . . . .	American Printing Co.
New York City . . . . .	James T. Broadbent . . . . .	Standard Textile Products Co.

New York City	Daniel E. Douty	U. S. Testing Co., Inc.
New York City	Alfred L. Ferguson	Consolidated Textile Corp.
New York City	George W. Fraker	National City Bank
New York City	Victor E. Freeman	Freeman-Summer Co.
New York City	Gustavus W. Gladwin	Gladwin, Redmond & Co., Inc.
New York City	Andrew J. Haire	Haire Publishing Co.
New York City	Thomas E. Heatley	Hunter Mfg. & Com. Co.
New York City	Everett H. Hinkle	Borne-Scrymser Co.
New York City	Samuel T. Hubbard	66 Beaver St.
New York City	Gurly Ellsworth Huggins	Beaver Mills
New York City	Alvin Hunsicker	Standard Textile Prod. Co.
New York City	W. O. Jelleme	Cohn-Hall-Marx Co.
New York City	Arthur R. Johnson	Ridley Watts Co.
New York City	Allen Jones	Beaver Mills
New York City	William D. Judson	Parker, Wilder & Co.
New York City	Alfred E. Jury	U. S. Rubber Co.
New York City	Alexander King	345 Broadway
New York City	J. J. Low	E. P. Walker & Co.
New York City	William McKinley, Jr.	W. H. Langley & Co.
New York City	Robert Mains	66 Leonard St.
New York City	Charles R. Marvin	Utica Willowvale Bleaching Co.
New York City	Louis Joseph Matos	National Aniline & Chem. Co.
New York City	Arthur I. Mellin	1170 Broadway
New York City	Herman A. Metz	H. A. Metz & Co.
New York City	John R. Mitchell	Mitchell-Bissell Co.
New York City	Robert L. Mitchell	Beaver Mills
New York City	Edward N. Morris	The Lawton Mills Corp.
New York City	Philip F. Nestel	Royal River Mfg. & Pwr. Co.
New York City	Samuel Newburger	Samuel Newburger & Co.
New York City	Burt F. Nichols	The Chemical Nat'l Bank
New York City	George Nichols	Minot, Hooper & Co.
New York City	John A. Pearson	354 Fourth Ave.
New York City	Ramsay Peugnet	U. S. Testing Co., Inc.
New York City	Carl H. Potter	Frank W. Van Ness & Associates
New York City	Robert W. Prentice	Butler, Prentice & Co.
New York City	Henry Smith Pritchett	The Carnegie Foundation
New York City	John E. Rousmaniere	Lawrence & Co.
New York City	Henry B. Thompson	U. S. Finishing Co.
New York City	Edward P. Walker	E. P. Walker & Co.
New York City	Herbert Walmsley	The Fisk Rubber Co.
New York City	Ridley Watts	Ridley Watts & Co.
New York City	Harold C. Whitman	The Esmond Mills
New York City	Malcolm D. Whitman	William Whitman Co., Inc.
New York City	Stephen T. Whittier	Catlin & Co.
New York City	William E. Winchester	Deering, Milliken & Co.
New York City	Theodore Wood	R. J. Caldwell Co.
Oswego	James G. Merrihan	Oswego Yarn Mills, Inc.
Utica	George De Forest	Utica Steam & Mohawk Valley Cotton Mills
Utica	Nicholas E. Devereux	The Skenandoa Cotton Co.
Utica	John J. Dinneen	La Tosca Yarn Mills
Utica	Beirne Gorden, Jr.	The Skenandoa Cotton Co.
Utica	Oscar W. Gridley	Utica Knitting Co.
Utica	Hubert D. Kernan	The Skenandoa Cotton Co.
Utica	John A. McGregor	Utica Steam & Mohawk Valley Cotton Mills
Utica	John E. McLoughlin	McLoughlin Textile Corp.
Utica	R. P. McLoughlin	McLoughlin Textile Corp.

Utica . . .	William H. Merriman . . .	Sauquoit Spinning Co.
Utica . . .	Rex. G. Witherbee . . .	Utica Steam & Mohawk Valley Cotton Mills
Victory Mills . . .	Frank A. Bean . . .	American Mfg. Co.
Victory Mills . . .	Francis Lynch . . .	American Mfg. Co.
Waterford . . .	George E. Luce . . .	Beaver Mills

## NORTH CAROLINA

Caroleen . . .	T. B. Stevenson . . .	The Henrietta Mills
Charlotte . . .	William S. Lee . . .	Southern Power Co.
Charlotte . . .	Robert Schaellibaum . . .	303 North Church St.
Cramerton . . .	Stuart W. Cramer . . .	Cramerton Mills, Inc.
Flat Rock . . .	Ellison A. Smyth . . .	—
Gastonia . . .	Allen D. Keyser . . .	Priscilla Spinning Co.
Monroe . . .	Arthur J. Draper . . .	Iccomorie Cotton Mills
Roanoke Rapids . . .	Samuel F. Patterson . . .	Roanoke Mills Co.
West Durham . . .	William A. Erwin . . .	Erwin Cotton Mills

## OHIO

Akron . . .	Elliott H. Barnwell . . .	Barnwell & Co.
Akron . . .	Poncet Davis . . .	Poncet Davis Co.
Akron . . .	Samuel A. Steere . . .	The Goodyear Tire & Rub- ber Co.
Akron . . .	Fred Taylor . . .	Firestone Tire & Rubber Co.
North Canton . . .	Stanley R. Cummings . . .	The Hoover Co.

## PENNSYLVANIA

Chester . . .	Charles E. Lord . . .	Aberfoyle Mfg. Co.
Chester . . .	Chas. A. Turner . . .	Chester Lace Mills
Lancaster . . .	Chester W. Carpenter . . .	John Farnum Co.
Philadelphia . . .	Bradley C. Algeo . . .	Philadelphia Textile School
Philadelphia . . .	Daniel Moore Bates . . .	Day & Zimmermann, Inc.
Philadelphia . . .	John R. Beatty . . .	Robert Beatty Co.
Philadelphia . . .	Jos. H. Brierley . . .	John H. Meyer & Co., Inc.
Philadelphia . . .	Joseph H. Bromley . . .	Quaker Lace Co.
Philadelphia . . .	Harry W. Butterworth . . .	H. W. Butterworth & Sons Co.
Philadelphia . . .	H. C. Dodd . . .	Thomas Henry & Sons, Inc.
Philadelphia . . .	Edward W. France . . .	Philadelphia Textile School
Philadelphia . . .	Charles L. Gilliland . . .	Aberfoyle Mfg. Co.
Philadelphia . . .	Robert P. Hooper . . .	Hooper Sons Mfg. Co.
Philadelphia . . .	J. Franklin McFadden . . .	McFadden, Sands & Co.
Philadelphia . . .	Simon Miller . . .	Jacob Miller Sons & Co.
Philadelphia . . .	Theodore F. Miller . . .	Stead & Miller Co.
Philadelphia . . .	Lindsey Morris . . .	The Ballinger Co.
Philadelphia . . .	E. K. Nelson . . .	Ridley Park Nat'l Bank
Philadelphia . . .	Henry W. Roth . . .	121 Chestnut St.
Philadelphia . . .	Harold A. Sands . . .	McFadden, Sands & Co.
Philadelphia . . .	Robert P. Smith . . .	Smith, Drum & Co.
Philadelphia . . .	Albert G. Thatcher . . .	Standard-Coosa-Thatcher Co.
Philadelphia . . .	James L. Whitaker . . .	William Whitaker & Sons
Philadelphia . . .	George Wood . . .	Milville Mfg. Co.
Philadelphia . . .	John P. Wood . . .	Aberfoyle Mfg. Co.
Reading . . .	Earl S. Jenekes . . .	Reading Cotton Mill

## RHODE ISLAND

Albion . . .	Arnold B. Chace . . .	Valley Falls Co.
Anthony . . .	Frederick R. Budlong . . .	Coventry Co.
Anthony . . .	Frank F. Woolley . . .	Coventry Co.



Ashton . . . . .	Frederic S. Wiggin . . . . .	Lonsdale Co.
Bristol . . . . .	Ezra Dixon . . . . .	Dixon Lubricating Saddle Co.
Central Falls . . . . .	Harold C. Barnefield . . . . .	Waypoysset Mfg. Co.
Central Falls . . . . .	Henry C. Dexter . . . . .	Warwick Lace Wks.
Centreville . . . . .	James T. Ferguson . . . . .	Warwick Mills
Cranston . . . . .	Harry S. Duckworth . . . . .	Cranston Print Works Co.
East Greenwich . . . . .	Thomas E. Donelan . . . . .	Greenwich Bleachery
Esmond . . . . .	Dexter Stevens . . . . .	The Esmond Mills
Forestdale . . . . .	William B. Orr . . . . .	Forestdale Mfg. Co.
Lonsdale . . . . .	John G. Whittaker . . . . .	Lonsdale Bleachery
Pawtucket . . . . .	G. Bion Allen . . . . .	J. & P. Coats (R. I.), Inc.
Pawtucket . . . . .	Herbert G. Beede . . . . .	Fort Dummer Mills
Pawtucket . . . . .	Donald J. Brightman . . . . .	The Ninigret Co.
Pawtucket . . . . .	Ernest Bromley . . . . .	Waypoysset Mfg. Co.
Pawtucket . . . . .	Benjamin C. Chace . . . . .	Crown Mfg. Co.
Pawtucket . . . . .	Robert Dow . . . . .	Solway Dyeing & Textile Co.
Pawtucket . . . . .	Frederic W. Easton . . . . .	Waypoysset Mfg. Co.
Pawtucket . . . . .	J. Richmond Fales . . . . .	Fales & Jenks Machine Co.
Pawtucket . . . . .	Lyman B. Goff . . . . .	Union Wadding Co.
Pawtucket . . . . .	George T. Greenhalgh . . . . .	Greenhalgh Mills
Pawtucket . . . . .	F. C. Hall . . . . .	Manville Jenekes Co.
Pawtucket . . . . .	S. Eugene Jackson . . . . .	Crown Mfg. Co.
Pawtucket . . . . .	Frederick L. Jenekes . . . . .	Jenekes Spinning Co.
Pawtucket . . . . .	Robert R. Jenks . . . . .	Fales & Jenks Machine Co.
Pawtucket . . . . .	John Lawson . . . . .	Hemphill Co.
Pawtucket . . . . .	James R. MacColl . . . . .	Lorraine Mfg. Co.
Pawtucket . . . . .	William B. MacColl . . . . .	Lorraine Mfg. Co.
Pawtucket . . . . .	Edward J. McCaughey . . . . .	51 Arlington St.
Pawtucket . . . . .	Edward L. Martin . . . . .	H & B Amer. Machine Co.
Pawtucket . . . . .	Frederic R. Mason . . . . .	Robert D. Mason Co.
Pawtucket . . . . .	Charles Morton . . . . .	J. & P. Coats (R. I.), Inc.
Pawtucket . . . . .	William Muir . . . . .	12 East Ave.
Pawtucket . . . . .	Henry Otte . . . . .	The Ninigret Co.
Pawtucket . . . . .	Charles O. Read . . . . .	Sayles Finishing Plants
Pawtucket . . . . .	E. R. Richardson . . . . .	H & B Amer. Machine Co.
Pawtucket . . . . .	Frank G. Rowley . . . . .	Seaconk Lace Co.
Pawtucket . . . . .	Dwight Seabury . . . . .	Dwight Seabury Co.
Pawtucket . . . . .	Walter H. Stearns . . . . .	Riverside Mills
Pawtucket . . . . .	S. Willard Thayer . . . . .	Dexter Yarn Co.
Pawtucket . . . . .	Charles R. Thompson . . . . .	Solway Dyeing & Textile Co.
Pawtucket . . . . .	Thomas H. Walker . . . . .	Lorraine Mfg. Co.
Pawtucket . . . . .	Wharton Whitaker . . . . .	William H. Haskell Mfg. Co.
Pawtucket . . . . .	J. H. Windle . . . . .	Fales & Jenks Machine Co.
Pawtucket . . . . .	Kenneth F. Wood . . . . .	Sayles Finishing Plants
Phenix . . . . .	Henry R. Brown . . . . .	Hope Co.
Phillipsdale . . . . .	Benjamin Fessenden . . . . .	Rumford Textile Co.
Providence . . . . .	Charles T. Aldrich . . . . .	Aldrich Brothers Co.
Providence . . . . .	John Ormsbee Ames . . . . .	Goddard Brothers
Providence . . . . .	L. D. Armstrong . . . . .	Atherton Pin Grid Bar Co.
Providence . . . . .	J. Arthur Atwood . . . . .	Ponemah Mills
Providence . . . . .	Luther C. Baldwin . . . . .	U. S. Bobbin & Shuttle Co.
Providence . . . . .	Roland H. Ballou . . . . .	Connecticut Mills Co.
Providence . . . . .	Theodore P. Bogert . . . . .	P. O. Box 1485
Providence . . . . .	Amos Miller Bowen . . . . .	U. S. Ring Traveler Co.
Providence . . . . .	Frank L. Branson . . . . .	B. B. & R. Knight, Inc.
Providence . . . . .	G. Edward Buxton, Jr. . . . .	Consolidated Textile Co.
Providence . . . . .	George Bradford Chadwick . . . . .	213 Industrial Trust Bldg.
Providence . . . . .	Frederic L. Chase . . . . .	F. A. Chase & Co.
Providence . . . . .	James E. Cheesman . . . . .	Champlain Silk Mills

Providence	Melvin H. Coffin	National Ring Traveler Co.
Providence	John W. Coggeshall	Tillotson Humidifier Co.
Providence	Henry B. Congdon	Industrial Trust Co.
Providence	Fred A. Cooley	Atlantic Mills
Providence	Henry B. Deming	H. B. Deming & Co.
Providence	Jesse P. Eddy	Tillinghast, Stiles Co.
Providence	John Prescott Farnsworth	Prov. Dye., Bleach. & Cal. Co.
Providence	George W. Foster	Universal Winding Co.
Providence	Thomas W. France	56 Linwood Ave.
Providence	Arthur C. Freeman	H. W. Butterworth & Sons Co.
Providence	N. L. R. Gardner	R. L. Greene Paper Co.
Providence	Albert H. Goff	The Textile-Fin. Mach. Co.
Providence	William Grosvenor	Grosvenor-Dale Co.
Providence	Gordon Harrower	The Wauregan Co.
Providence	Richard Haworth	Richard Haworth, Inc.
Providence	George C. Hinckley	707 Grosvenor Bldg.
Providence	Frederic W. Howe	Crompton & Knowles Loom Wks.
Providence	Harrison B. Huntoon, Jr.	Providence Braid Co.
Providence	Maxwell C. Huntoon	Woodlawn Finishing Co.
Providence	Edward M. Johnson	Arnold, Hoffman & Co., Inc.
Providence	Ernest G. Jones	Cooper & Brush
Providence	Henry F. Lippitt	Manville Co.
Providence	Edwin V. Livesey	Mt. Hope Spinning Co.
Providence	L. A. Lockwood	New Bedford Cotton Waste Co.
Providence	William B. McBee	Blackstone Mut. Fire Ins. Co.
Providence	Joseph B. McIntyre	166 President Ave.
Providence	Charles R. Makepeace	C. R. Makepeace & Co.
Providence	Charles S. Makepeace	Butler Exchange Bldg.
Providence	John Warren Manley	Sayles Bleacheries
Providence	Henry W. Mason	10 South Water St.
Providence	John W. Mayor	Thomas Mayor & Son
Providence	John S. Merchant	Standard Mill Supply Co.
Providence	Charles H. Merriman, Jr.	Manville Co.
Providence	Wilfred C. Murphy	Providence Mill Supply Co.
Providence	A. W. Newell	Hazard Cotton Co.
Providence	Charles H. Newell	Baltic Mills Co.
Providence	George F. Payne	169 Columbia Ave.
Providence	William C. Peirce	Elizabeth Mills
Providence	William S. Pepperell	Grosvenor-Dale Co.
Providence	Frank B. Ricketson	The Quinebaug Co.
Providence	E. A. Rusden	The Textile-Fin. Mach. Co.
Providence	Everett E. Salisbury	Atlantic Mills
Providence	David C. Scott	Henry L. Scott & Co.
Providence	Arthur N. Sheldon	F. P. Sheldon & Co.
Providence	Frederick S. Sibley	R. I. Hospital Trust Co.
Providence	Antonio Spencer	U. S. Ring Traveler Co.
Providence	Robert W. Taft	Coventry Co.
Providence	Henry M. Tarr	Cotton Piece Goods Traffic Assn.
Providence	Charles F. Taylor	57 Weybosset St.
Providence	J. Henry Thorpe	U. S. Bobbin & Shuttle Co.
Providence	Philip C. Wentworth	National Ring Traveler Co.
Providence	Alexander S. West	U. S. Gutta Percha Paint Co.
Riverpoint	Patrick H. Quinn	Warwick Lace Works
Thornton	W. O. Todd	Poetsset Worsted Co., Inc.
Valley Falls	Andrew J. Currier	66 Broad St.
Warren	Hugh J. Gourley	Warren Mfg. Co.
Westerly	William Clark	American Thread Co.

Westerly . . .	C. S. Fowler . . .	The Westerly Textile Co.
Woonsocket . . .	William Halliwell . . .	Lawton Spinning Co.
Woonsocket . . .	Percival S. Howe, Jr. . .	Manville Co.
Woonsocket . . .	John G. Oswald . . .	Nyanza Mills
Woonsocket . . .	William N. Kimball . . .	Manville Co.
Woonsocket . . .	John Montgomery . . .	Woonsocket Machine & Press Co.

## SOUTH CAROLINA

Anderson . . .	Henry P. Hunter . . .	Equinox Mill
Blythewood . . .	Vladimir F. Gniessin . . .	
Cheraw . . .	Robert Chapman . . .	Cheraw Cotton Mills, Inc.
Chester . . .	Henry Shaw Adams . . .	The Springstein Mills
Langley . . .	George E. Spofford . . .	Langley Mills
Ware Shoals . . .	W. C. Cobb . . .	Ware Shoals Mfg. Co.

## TENNESSEE

Memphis . . .	Joseph Newburger . . .	Newburger Cotton Co.
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## TEXAS

Houston . . .	Wm. L. Clayton . . .	Anderson, Clayton & Co.
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## VERMONT

Brattleboro . . .	David Grove . . .	Fort Dummer Mills
Burlington . . .	John E. Tobin . . .	Queen City Cotton Co.

## VIRGINIA

Altavista . . .	John Cumnock . . .	Altavista Cotton Mills
Danville . . .	George W. Robertson . . .	Riverside & Dan River Cotton Mills
Richmond . . .	John L. Patterson . . .	P. O. Box 1481

## BRAZIL

Rio de Janeiro . . .	Salvador R. Gama . . .	Machado, Gama & Co.
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## CANADA

## PROVINCE OF NEW BRUNSWICK

Marysville . . .	Joseph Dolphin . . .	Canadian Cottons, Ltd.
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## PROVINCE OF ONTARIO

Cornwall . . .	William V. Boyd . . .	Canadian Cottons, Ltd.
Hamilton . . .	Alexander E. Adam . . .	Canadian Cottons, Ltd.
Hamilton . . .	Alan V. Young . . .	Hamilton Cotton Co.
Welland . . .	Nelson A. Batchelder . . .	Empire Cotton Mills, Ltd.
Welland . . .	T. Frank Cuddy . . .	Empire Cotton Mills, Ltd.

## PROVINCE OF QUEBEC

Montreal . . .	Harry D. Belland . . .	Dominion Textile Co., Ltd.
Montreal . . .	Alfred Clement . . .	Dominion Textile Co., Ltd.
Montreal . . .	F. G. Daniels . . .	Dominion Textile Co., Ltd.
Montreal . . .	Arthur O. Dawson . . .	Canadian Cottons, Ltd.
Montreal . . .	Sir C. B. Gordon . . .	Dominion Textile Co., Ltd.
Montreal . . .	John F. Minniek . . .	Dominion Textile Co., Ltd.
Sherbrooke . . .	Thomas Aspden . . .	Canadian-Connecticut Cotton Mill
Valleyfield . . .	John Lowe . . .	The Montreal Cottons, Ltd.
Valleyfield . . .	Charles H. Potter . . .	The Montreal Cottons, Ltd.

## CZECHOSLOVAKIA

Prague	Max Grab	M. Grab Sons
Prague	Stephen Haurowitz	L. Haurowitz-Grottan

## ENGLAND

Manchester	Harry P. Curtis	Curtis & Garratt, Ltd.
Manchester	Sir Charles W. Macara	Henry Bannerman & Sons, Ltd.
Manchester	William Myers	College of Technology
Surrey	James H. Abercrombie	"Rutland" Dorking Rd.

## INDIA

Madras	G. W. Chambers	Binny & Co. (Madras) Ltd.
Madras	K. Kay	Binny & Co. (Madras) Ltd.
Madras Pres'y	E. N. Murti	Tanuku Kristna Dist.
Madras	Alfred Percival Symonds	Binny & Co. (Madras), Ltd.

## JAPAN

Kyoto	Narazo Takatsuji	Karasumaru-dori Imadega- waagaru
Osaka	C. C. Hedrick	Yokohama Kii-to Kwaisha, Ltd.

## RECAPITULATION

Alabama	2
California	3
Connecticut	31
Delaware	1
Dist. of Columbia	2
Georgia	10
Illinois	3
Indiana	2
Kentucky	1
Louisiana	3
Maine	17
Maryland	5
Massachusetts	432
Michigan	1
New Hampshire	21
New Jersey	17
New York	81
North Carolina	9
Ohio	5
Pennsylvania	26
Rhode Island	125
South Carolina	6
Tennessee	1
Texas	1
Vermont	2
Virginia	3
Brazil	1
Province of New Brunswick	1
Province of Ontario	5
Province of Quebec	9
Czechoslovakia	2
England	4
India	4
Japan	2
Total	838

## SUSTAINING MEMBERS

Aberfoyle Mfg. Co.	Chester, Pa.	May 22, 1917
Charles L. Gilliland, Treas.		
Acushnet Mill Corp.	New Bedford, Mass.	Nov. 21, 1918
J. E. Stanton, Jr., Treas.		
Aldrich Brothers Co.	Moosup, Conn.	Jan. 24, 1919
Charles T. Aldrich, Treas.		
Algonquin Printing Co.	Fall River, Mass.	Nov. 1, 1918
William H. Jennings, Treas.		
American Mfg. Co.	Victory Mills, N. Y.	Nov. 1, 1917
Francis Lynch, Agent.		
American Printing Co.	Fall River, Mass.	Jan. 7, 1918
Nathan Durfee, Asst. Treas.		
Amory, Browne & Co.	Boston, Mass.	Sept. 18, 1917
Robert Amory.		
Anagnosti, William & Co.	Boston, Mass.	Aug. 7, 1922
William Anagnosti.		
Ancona Co.	Fall River, Mass.	Nov. 1, 1918
G. D. Flynn, Jr., Asst. Treas.		
Anderson, Clayton & Co.	Houston, Tex.	June 1, 1923
John Hopkins.		
Androscooggin Mills	Lewiston, Me.	July 23, 1917
P. Y. DeNormandie, Treas.		
Arkwright Mills	Fall River, Mass.	Sept. 10, 1918
J. Edward Newton, Treas.		
Ashland Cotton Co.	Jewett City, Conn.	May 12, 1917
Grosvenor Ely, Treas.		
Attaugan Co.	Killingly, Conn.	July 20, 1918
Calvin H. Frisbee, Pres.		
Barber-Colman Co.	Rockford, Ill.	Sept. 10, 1917
Howard D. Colman, Pres.		
Barnard Mfg. Co.	Fall River, Mass.	Nov. 1, 1918
J. Edward Newton, Treas.		
Bates Mfg. Co.	Lewiston, Me.	Sept. 18, 1917
H. deForest Lockwood, Treas.		
Beacon Mfg. Co.	New Bedford, Mass.	Nov. 7, 1917
Charles D. Owen, Treas.		
Beaver Mills	North Adams, Mass.	Apr. 9, 1918
Gurly Ellsworth Huggins, Pres.		
Bemis Bro. Bag Co.	Boston, Mass.	June 6, 1917
George N. Roberts, Vice Pres.		
Berkshire Cotton Mfg. Co.	Adams, Mass.	May 12, 1917
Charles T. Plunkett, Pres.		
Boott Mills	Lowell, Mass.	July 17, 1917
Frederick A. Flather, Treas.		
Borden, Richard Mfg. Co.	Fall River, Mass.	July 17, 1917
Charles N. Borden, Treas.		
Boston Duck Co.	Bondsville, Mass.	July 23, 1917
P. Y. DeNormandie, Treas.		
Boston Mfg. Co.	Waltham, Mass.	May 31, 1917
John A. Sweetser, Treas.		
Bourne Mills	Fall River, Mass.	May 1, 1920
George Delano, Treas.		
Bragdon Lord & Nagle Co., Inc.	Boston, Mass.	Mar. 1, 1918
Henry G. Lord, Pres.		
Brighton Mills	Passaic, N. J.	July 25, 1917
William L. Lyall, Pres.		
Butler Mill	New Bedford, Mass.	Oct. 6, 1921
Morgan Butler, Treas.		
Butterworth, H. W., & Sons Co.	Philadelphia, Pa.	Sept. 12, 1917
Harry W. Butterworth, Pres.		

California Cotton Mills Co. J. R. Millar, Gen. Mgr.	Oakland, Calif.	Feb. 8, 1921
Chace Mills Henry F. Grinnell, Treas.	Fall River, Mass.	Mar. 18, 1918
Charlton Mills James Sinclair, Treas.	Fall River, Mass.	Jan. 14, 1919
Chicopee Mfg. Corp. Charles A. McCormick, Treas.	Chicopee Falls, Mass.	Sept. 12, 1917
City Mfg. Corp. John B. Strongman, Treas.	New Bedford, Mass.	July 17, 1917
Columbian Mfg. Co. Francis W. Fabyan, Treas.	Greenville, N. H.	Nov. 12, 1917
Cordis Mills Francis W. Fabyan, Treas.	Millbury, Mass.	Nov. 12, 1917
Corn Products Refining Co. Charles P. Slocum.	New York City	Mar. 2, 1918
Cornell Mills Robert W. Zuill, Treas.	Fall River, Mass.	July 20, 1918
Crompton & Knowles Loom Works Homer Gage, Pres.	Worcester, Mass.	July 20, 1918
Crown Mfg. Co. Benjamin C. Chace, Gen. Mgr.	Pawtucket, R. I.	Oct. 19, 1918
Curtis & Marble Machine Co. Edwin H. Marble, Pres.	Worcester, Mass.	Apr. 8, 1919
Dana Warp Mills Philip Dana, Pres.	Westbrook, Me.	May 12, 1917
Davis Mills Frank L. Carpenter, Treas.	Fall River, Mass.	July 20, 1917
Davol Mills M. R. Brown, Treas.	Fall River, Mass.	Aug. 12, 1918
Day & Zimmermann, Inc. Charles Penrose, Asst. Gen. Mgr.	Philadelphia, Pa.	Oct. 15, 1920
Deering, Milliken & Co., Inc. A. L. Fitzpatrick, Vice Pres.	New York City	Nov. 26, 1919
D'Olier, Franklin & Co., Inc. Franklin D'Olier, Pres. & Treas.	Philadelphia, Pa.	Dec. 7, 1923
Draper Corp. B. H. Bristow Draper, Treas.	Hopedale, Mass.	Aug. 10, 1917
du Pont de Nemours, E. I. & Co., Inc. E. A. MacKinnon.	Boston, Mass.	Dec. 29, 1917
Dwight Mfg. Co. Ernest Lovering, Treas.	Chicopee, Mass.	Dec. 5, 1918
Esmond Mills, The Dexter Stevens, Mgr.	Esmond, R. I.	Nov. 14, 1918
Everett Mills Frederic C. McDuffie, Treas.	Lawrence, Mass.	Aug. 1, 1923
Fairhaven Mills Charles M. Holmes, Treas.	New Bedford, Mass.	July 30, 1917
Farnum, John, Co. John H. Packard, Treas. & Sec.	Philadelphia, Pa.	Oct. 5, 1923
Fitchburg Yarn Co. R. S. Wallace, Treas.	Fitchburg, Mass.	Nov. 1, 1918
Forestdale Mfg. Co. William B. Orr, Treas.	Forestdale, R. I.	Jan. 23, 1919
Fort Dummer Mills Edward G. Chace, Treas.	Brattleboro, Vt.	Nov. 15, 1918
Francis, T. A., & Co. T. A. Francis.	Providence, R. I.	Aug. 1, 1919

General Electric Co. Gerard Swope, Pres. Sidney B. Paine.	West Lynn, Mass.	May 24, 1917
Gilmore, K. M., & Co. George L. Gilmore.	Somerville, Mass.	June 4, 1917
Goodyear Cotton Mills, Inc. H. M. Coulter, Asst. Treas.	Killingly, Conn.	Feb. 8, 1918
Gosnold Mills Co. Charles M. Holmes, Treas.	New Bedford, Mass.	Sept. 25, 1917
Granite Mills C. M. Shove, Treas.	Fall River, Mass.	June 20, 1918
Grant Yarn Co. George P. Grant, Jr., Treas.	Fitchburg, Mass.	May 12, 1917
Greene, R. L., Paper Co. N. L. R. Gardner, Pres.	Providence, R. I.	Aug. 10, 1917
Greylock Mills Charles T. Plunkett, Pres.	North Adams, Mass.	May 15, 1917
Grinnell Mfg. Corp. Joseph W. Webster, Treas.	New Bedford, Mass.	Mar. 18, 1918
Griswoldville Mfg. Co. Joseph W. Ballard, Treas.	Griswoldville, Mass.	Jan. 21, 1918
Grosvenor-Dale Co. A. W. Dimick, Treas.	No. Grosvenor-Dale, Conn.	Sept. 10, 1918
Haasahoe Mfg. Co. Walker Wadsworth, Agent.	Valley Falls, R. I.	Nov. 8, 1918
Harding, Tilton & Co. Newell W. Tilton.	New York City	Dec. 17, 1917
Harmony Mills Albert Greene Duncan, Treas.	Cohoes, N. Y.	May 10, 1917
Hathaway Mfg. Co. J. E. Stanton, Jr., Treas.	New Bedford, Mass.	Nov. 21, 1918
Hill & Cutler Co. Laurance D. Chapman, Asst. Treas.	New Bedford, Mass.	Mar. 7, 1924
Hill Mfg. Co. William F. Moore, Treas.	Lewiston, Me.	June 15, 1923
Holmes Mfg. Co. Charles M. Holmes, Treas.	New Bedford, Mass.	Sept. 18, 1917
Hoosac Cotton Mills Harold M. Coxen.	North Adams, Mass.	Feb. 21, 1918
Hopedale Mfg. Co. George Otis Draper, Vice Pres.	Milford, Mass.	July 1, 1919
Howard Bros. Mfg. Co. Herbert Midgley, Pres. & Gen. Mgr.	Worcester, Mass.	Jan. 22, 1918
Interlaken Mills Harris H. Bucklin, Asst. Treas.	Phenix, R. I.	Oct. 29, 1918
International Cotton Mills S. Harold Greene, Pres.	Boston, Mass.	Nov. 5, 1917
Ipswich Mills Russell H. Leonard, Treas.	Ipswich, Mass.	June 6, 1924
Jenckes Spinning Co. Frederick L. Jenckes, Treas.	Pawtucket, R. I.	Mar. 18, 1918
Jones & Brown Co. William A. Jones, Pres.	Boston, Mass.	July 15, 1922
King Philip Mills Simeon B. Chase, Treas.	Fall River, Mass.	June 14, 1918
Lancaster Mills S. Harold Greene, Pres.	Clinton, Mass.	Nov. 5, 1917

Lawrence Duck Co. William L. Barrell, Treas.	Lawrence, Mass.	Mar. 15, 1918
Lawrence & Co. John S. Lawrence.	Boston, Mass.	May 31, 1917
Lawton Mills Corp., The S. Harold Greene, Treas.	Plainfield, Conn.	Nov. 5, 1917
Lewis Mfg. Co. J. A. Valentine, Asst. Treas.	Walpole, Mass.	Aug. 3, 1921
Lincoln Mfg. Co. Israel Brayton, Treas.	Fall River, Mass.	July 30, 1917
Little Androskoggin Water Power Co. Gerrish H. Milliken.	Auburn, Me.	Sept. 18, 1917
Lockwood Co. William E. Winchester.	Waterville, Me.	Aug. 10, 1917
Lockwood, Greene & Co., Inc. Frank W. Reynolds, Dir.	Boston, Mass.	Sept. 27, 1917
Loper, Ralph E., & Co. Ralph E. Loper, Pres.	Fall River, Mass.	Nov. 1, 1923
Lorraine Mfg. Co. James R. MacColl, Pres.	Saylesville, R. I.	May 24, 1917
Luther Mfg. Co. John H. Holt, Treas.	Fall River, Mass.	Feb. 1, 1918
Lyman Mills Henry L. Sigourney, Asst. Treas.	Holyoke, Mass.	Dec. 5, 1918
McFadden, George H., & Bro. Isaac R. Thomas, Mgr.	Boston, Mass.	Oct. 29, 1918
McFadden, Sands & Co. James Lawrence	Boston, Mass.	June 28, 1918
Mackintosh, D., & Sons Co. Charles E. Mackintosh, Pres. & Treas.	Holyoke, Mass.	Aug. 1, 1923
Manville Co. Charles H. Merriam, Jr., Treas.	Providence, R. I.	Oct. 29, 1918
Mason, Robert D., Co. Frederic R. Mason, Pres.	Pawtucket, R. I.	Nov. 1, 1918
Massasoit Mfg. Co. P. S. Palmer, Treas.	Fall River, Mass.	June 20, 1918
Maverick Mills Arthur Clinton Swift, Gen. Mgr.	East Boston, Mass.	Dec. 27, 1918
Merrimack Mfg. Co. Ward Thoron, Treas.	Lowell, Mass.	May 10, 1917
Minot, Hooper & Co. Thomas W. Sloeum.	New York City	Jan. 1, 1919
Montgomery, The, J. R. Co. John R. Montgomery, Pres.	Windsor Locks, Conn.	July 17, 1917
Morse Chain Co. F. L. Morse, Pres. John S. White.	Ithaca, N. Y.	Nov. 1, 1920
Narragansett Mills Isaac A. Brown, Treas.	Fall River, Mass.	Aug. 12, 1918
Nashua Mfg. Co. Frederic Amory, Treas.	Nashua, N. H.	Aug. 11, 1917
National Aniline & Chemical Co. W. M. Vermilye, Executive Vice Pres.	New York City	Jan. 17, 1918
Naumkeag Steam Cotton Co. Nathaniel G. Simonds, Treas.	Salem, Mass.	Aug. 2, 1917
New Bedford Storage Warehouse Co. Clarence R. O'Brien, Treas.	New Bedford, Mass.	Oct. 6, 1921
Newmarket Mfg. Co. Charles Walcott, Treas.	Newmarket, N. H.	Dec. 16, 1918
Newport Chemical Wks., Inc. Elvin H. Killheffer, Vice Pres.	Passaic, N. J.	Nov. 10, 1919



New York Mills Corp. A. F. Hobbs, Vice Pres.	New York Mills, N. Y.	Feb. 10, 1920
Nobska Spinning Co. F. W. Nichols, Jr., Treas.	Taunton, Mass.	Jan. 12, 1918
Nyanza Mills Nathaniel F. Ayer, Treas.	Woonsocket, R. I.	Jan. 14, 1919
Otis Co. Francis W. Fabyan, Treas.	Ware, Mass.	Nov. 12, 1917
Pacific Mills Edwin Farnham Greene, Treas.	Lawrence, Mass.	May 18, 1917
Parker, Wilder & Co. S. Parker Bremer.	Boston, Mass.	Nov. 23, 1918
Parkhill Mfg. Co. Warner M. Allen, Asst. Treas.	Fitchburg, Mass.	May 11, 1917
Parks-Cramer Co. R. S. Parks, Treas.	Fitchburg, Mass.	May 11, 1917
Pepperell Mfg. Co. Walter H. Bradley, Treas.	Biddeford, Me.	Dec. 17, 1917
Pierce Mfg. Corp. Andrew G. Pierce, Jr., Treas.	New Bedford, Mass.	Dec. 3, 1917
Pilgrim Mills Arthur C. Homer, Treas.	Fall River, Mass.	July 17, 1917
Pocasset Mfg. Co. W. Frank Shove, Treas.	Fall River, Mass.	June 6, 1917
Pond Lily Co., The William C. Harmon, Pres.	New Haven, Conn.	Aug. 21, 1917
Ponemah Mills J. Arthur Atwood, Treas.	Taftville, Conn.	Mar. 18, 1918
Potomaska Mills Corp. P. L. Kent, Treas.	New Bedford, Mass.	Nov. 21, 1918
Providence Dyeing, Bleaching & Calendering Co. John P. Farnsworth, Pres.	Providence, R. I.	Oct. 29, 1919
Putnam Mfg. Co. Winthrop B. Nye, Treas.	Putnam, Conn.	Jan. 1, 1919
Queen City Cotton Co. Andrew McLean Young, Treas.	Burlington, Vt.	Apr. 24, 1918
Quinebaug Co., The Frank B. Ricketson, Asst. Treas.	Danielson, Conn.	Sept. 10, 1918
Quissett Mill Edward H. Cook, Treas.	New Bedford, Mass.	Feb. 9, 1918
Renfrew Mfg. Co. Francis U. Stearns, Vice Pres.	Adams, Mass.	Sept. 5, 1917
Saco-Lowell Shops Frank J. Hale.	Lowell, Mass.	May 18, 1917
Sanderson & Porter F. G. Coburn, Mgr.	New York City	Dec. 7, 1923
Shawmut Mills Richard B. Chace, Treas.	Fall River, Mass.	Dec. 3, 1918
Slater, S. & Sons, Inc. H. Nelson Slater, Pres.	Webster, Mass.	June 6, 1924
Soule Mill Fred H. McDevitt, Agent.	New Bedford, Mass.	Nov. 27, 1918
Sprunt, Alexander & Son, Inc. D. Allen Smith, Mgr.	Boston, Mass.	Oct. 18, 1923
Stafford Co., The George P. Erhard, Pres.	Boston, Mass.	Apr. 1, 1918

Stark Mills F. Hartwell Greene, Treas.	Boston, Mass.	June 1, 1923
Stevens Mfg. Co. Charles B. Chase, Gen. Mgr.	Fall River, Mass.	Aug. 20, 1917
Suncook Mills W. Rodman Peabody, Treas.	Suncook, N. H.	Aug. 1, 1923
Taber Mill John Sullivan, Agent.	New Bedford, Mass.	May 17, 1917
Thorndike Co. P. Y. DeNormandie, Treas.	West Warren, Mass.	Nov. 12, 1917
Totokett Mfg. Co. Calvin H. Frisbie, Pres.	Versailles, Conn.	July 20, 1918
Troy Cotton & Woolen Manufactory J. Edward Newton, Treas.	Fall River, Mass.	Sept. 10, 1918
United Piece Dye Wks. Albert Blum, Treas.	Lodi, N. J.	Feb. 12, 1918
Wade Publishing Co., The Frederic L. Babcock, Ed.	Cambridge, Mass.	Apr. 6, 1922
Wampanoag Mills Albion C. Cook, Treas.	Fall River, Mass.	Dec. 7, 1917
Wamsutta Mills C. F. Broughton, Treas.	New Bedford, Mass.	Sept. 10, 1917
Warren Mfg. Co. Wm. S. Pepperell, Asst. Treas.	Warren, R. I.	July 29, 1918
Warwick Mills Charles O. Richardson, Treas.	Centreville, R. I.	Jan. 29, 1919
Watts, Ridley & Co. Ridley Watts.	New York, N. Y.	Nov. 1, 1918
Wauregan Co., The W. Irving Bullard.	Wauregan, Conn.	Sept. 10, 1918
Waypoyset Mfg. Co. Harold C. Barnefield, Treas.	Central Falls, R. I.	Jan. 28, 1919
Webb, Charles J. Sons Co. Andrew S. Webb, Treas.	Philadelphia, Pa.	Aug. 3, 1921
West Boylston Mfg. Co. G. Arthur Cook, Treas.	Easthampton, Mass.	Nov. 1, 1918
Whitin Machine Wks. E. Kent Swift, Treas.	Whitinsville, Mass.	Nov. 1, 1918
Whitin, Paul, Mfg. Co. Henry T. Whitin, Pres.	Northbridge, Mass.	Jan. 22, 1918
Whitman, Clarence, & Son, Inc. C. Morton Whitman, Vice Pres.	New York, N. Y.	Dec. 18, 1918
Whitman Mills Albert G. Mason, Treas.	New Bedford, Mass.	Feb. 8, 1918
Wonalancet Co. James R. Everett, Vice Pres. & Gen. Mgr.	Nashua, N. H.	Mar. 15, 1918
York Manufacturing Co. Frederic C. McDuffie, Treas.	Saco, Me.	Aug. 1, 1923

## SUSTAINING MEMBERS

## ARRANGED BY STATES

## CALIFORNIA

Oakland	California Cotton Mills Co.	J. R. Millar, Gen. Mgr.
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## CONNECTICUT

Danielson	Quinebaug Co.	F. B. Ricketson, Asst. Treas.
Grosvenor-Dale	Grosvenor-Dale Co.	A. W. Dimick, Treas.
Jewett City	Ashland Cotton Co.	Grosvenor Ely, Treas.
Killingly	Attawaugan Co.	Calvin H. Frisbie, Pres.
Killingly	Goodyear Cotton Mills, Inc.	H. M. Coulter, Asst. Treas.
Moosup	Aldrich Bros. Co.	Chas. T. Aldrich, Treas.
New Haven	The Pond Lily Co.	William C. Harmon, Pres.
Plainfield	The Lawton Mills Corp.	S. Harold Greene, Treas.
Putnam	Putnam Mfg. Co.	Winthrop B. Nye, Treas.
Taftville	Ponemah Mills	J. Arthur Atwood, Treas.
Versailles	Totokett Mfg. Co.	Melvin H. Frisbie, Pres.
Wauregan	Wauregan Co.	W. Irving Bullard
Windsor Locks	J. R. Montgomery Co.	John R. Montgomery, Pres.

## ILLINOIS

Rockford	Barber-Colman Co.	Howard D. Colman, Pres.
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## MAINE

Auburn	Little Androscoggin Water Power Co.	Gerrish H. Milliken
Biddeford	Pepperell Mfg. Co.	Walter H. Bradley, Treas.
Lewiston	Androscoggin Mills	P. Y. DeNormandie, Treas.
Lewiston	Bates Mfg. Co.	H. deForest Lockwood, Treas.
Lewiston	Hill Mfg. Co.	William F. Moore, Treas.
Saco	York Mfg. Co.	F. C. McDuffie, Treas.
Waterville	Lockwood Co.	William E. Winchester
Westbrook	Dana Warp Mills	Philip Dana

## MASSACHUSETTS

Adams	Berkshire Cotton Mfg. Co.	Charles T. Plunkett, Pres.
Adams	Renfrew Mfg. Co.	Francis U. Stearns, Vice Pres.
Bondsville	Boston Duck Co.	P. Y. DeNormandie, Treas.
Boston	Amory, Browne & Co.	Robert Amory
Boston	William Anagnosti & Co.	William Anagnosti
Boston	Bemis Bro. Bag Co.	George N. Roberts, Vice Pres.
Boston	Bragdon, Lord & Nagle Co., Inc.	Henry G. Lord, Pres.
Boston	E. I. du Pont de Nemours & Co., Inc.	E. A. MacKinnon
Boston	International Cotton Mills	S. Harold Greene, Pres.
Boston	Jones & Brown Co.	William A. Jones, Pres.
Boston	Lawrence & Co.	John S. Lawrence
Boston	Lockwood, Greene & Co.	Frank W. Reynolds, Pres.
Boston	George H. McFadden & Bro.	Isaac R. Thomas, Mgr.
Boston	McFadden, Sands & Co.	James Lawrence
Boston	Parker, Wilder & Co.	S. Parker Bremer
Boston	Parks-Cramer Co.	R. S. Parks, Treas.
Boston	Alexander Sprunt & Son, Inc.	D. Allen Smith, Mgr.
Boston	The Stafford Co.	George P. Erhard, Pres.
Boston	Stark Mills	F. Hartwell Greene, Treas.

Cambridge	The Wade Publishing Co.	Fred'k L. Babcock, Ed. & Mgr.
Chicopee	Dwight Mfg. Co.	Ernest Lovering, Treas.
Chicopee Falls	Chicopee Mfg. Corp.	Chas. A. McCormick, Treas.
Clinton	LANCASTER MILLS	S. Harold Greene, Pres.
East Boston	Maverick Mills	Arthur Clinton Swift, Gen. Mgr.
Easthampton	West Boylston Mfg. Co.	G. Arthur Cook, Treas.
Fall River	Algonquin Printing Co.	William H. Jennings, Treas.
Fall River	American Printing Co.	Nathan Durfee, Asst. Treas.
Fall River	Ancona Co.	G. D. Flynn, Jr., Asst. Treas.
Fall River	Arkwright Mills	J. Edward Newton, Treas.
Fall River	Barnard Mfg. Co.	J. Edward Newton, Treas.
Fall River	Richard Borden Mfg. Co.	Charles N. Borden, Treas.
Fall River	Bourne Mills	Geo. Delano, Treas.
Fall River	Chace Mills	Henry F. Grinnell, Treas.
Fall River	Charlton Mills	James Sinclair, Treas.
Fall River	Cornell Mills	Robert W. Zuill, Treas.
Fall River	Davis Mills	Frank L. Carpenter, Treas.
Fall River	Davol Mills	M. R. Brown, Treas.
Fall River	Granite Mills	C. M. Shove, Treas.
Fall River	King Philip Mills	Simcon B. Chase, Treas.
Fall River	Lincoln Mfg. Co.	Israel Braxton, Treas.
Fall River	Ralph E. Loper & Co.	R. E. Loper, Pres.
Fall River	Luther Mfg. Co.	John H. Holt
Fall River	Massasoit Mfg. Co.	P. S. Palmer, Treas.
Fall River	Narragansett Mills	Isaac A. Brown, Treas.
Fall River	Pilgrim Mills	Arthur C. Homer, Treas.
Fall River	Pocasset Mfg. Co.	W. Frank Shove, Treas.
Fall River	Shawmut Mills, Inc.	Richard B. Chace, Treas.
Fall River	Stevens Mfg. Co.	Charles B. Chace, Gen. Mgr.
Fall River	Troy Cotton & Woolen Mfry.	J. Edward Newton, Treas.
Fall River	Wampanoag Mills	Albion C. Cook, Treas.
Fitchburg	Fitchburg Yarn Co.	R. S. Wallace, Treas.
Fitchburg	Grant Yarn Co.	George P. Grant, Jr., Treas.
Fitchburg	Parkhill Mfg. Co.	Warner M. Allen, Asst. Treas.
Griswoldville	Griswoldville Mfg. Co.	Joseph W. Ballard, Treas.
Holyoke	Lyman Mills	Henry L. Sigourney, Asst. Treas.
Holyoke	D. Mackintosh & Sons Co.	Chas. E. Mackintosh, Pres. & Treas.
Ipswich	Ipswich Mills	Russell H. Leonard, Treas.
Lawrence	Everett Mills	F. C. McDuffie, Treas.
Lawrence	Lawrence Duck Co.	William L. Barrell, Treas.
Lawrence	Pacific Mills	Edwin Farnham Greene, Treas.
Lowell	Boott Mills	Frederick A. Flather, Treas.
Lowell	Merrimack Mfg. Co.	Ward Thoron, Treas.
Lowell	Saco-Lowell Shops	Frank J. Hale, Gen. Agt.
Millford	Hopedale Mfg. Co.	George Otis Draper, Vice Pres.
Millbury	Cordis Mills	Francis W. Fabyan, Treas.
New Bedford	Acushnet Mill Corp.	J. E. Stanton, Jr., Treas.
New Bedford	Beacon Mfg. Co.	Charles D. Owen, Treas.
New Bedford	Butler Mill	Morgan Butler, Treas.
New Bedford	City Manufacturing Corp.	John B. Strongman, Treas.
New Bedford	Fairhaven Mills	Charles M. Holmes, Treas.
New Bedford	Gosnold Mills Co.	Charles M. Holmes, Treas.
New Bedford	Grinnell Mfg. Corp.	Joseph W. Webster, Treas.
New Bedford	Hathaway Mfg. Co.	J. E. Stanton, Jr., Treas.
New Bedford	Hill & Cutler Co.	L. D. Chapman, Asst. Treas.
New Bedford	Holmes Mfg. Co.	Charles M. Holmes, Treas.
New Bedford	New Bedford Storage Warehouse Co.	Clarence R. O'Brien, Treas.
New Bedford	Pierce Mfg. Corp.	Andrew G. Pierce, Jr., Treas.
New Bedford	Potomaska Mills Corp.	P. L. Kent, Treas.
New Bedford	Quisset Mill	Edward H. Cook, Treas.
New Bedford	Soule Mill	Fred H. McDevitt, Agt.

New Bedford	Taber Mill	John Sullivan, Agt.
New Bedford	Wamsutta Mills	C. T. Broughton, Treas.
New Bedford	Whitman Mills	Albert G. Mason, Treas.
North Adams	Beaver Mills	Gurry Ellsworth Huggins
North Adams	Greylock Mills	Charles T. Plunkett, Pres.
North Adams	Hoosac Cotton Mills	Harold M. Coxen
Northbridge	Paul Whitin Mfg. Co.	Henry T. Whitin, Pres.
Salem	Naumkeag Steam Cotton Co.	Nathaniel G. Simonds, Treas.
Somerville	K. M. Gilmore & Co.	George L. Gilmore
Taunton	Nobska Spinning Co.	F. W. Nichols, Jr., Treas.
Walpole	Lewis Mfg. Co.	J. A. Valentine, Asst. Treas.
Waltham	Boston Mfg. Co.	John A. Sweetser, Treas.
Ware	Otis Co.	Francis W. Fabyan, Treas.
Webster	S. Slater & Sons, Inc.	H. Nelson Slater.
West Lynn	General Electric Co.	Gerard Swope, Pres.
		Sidney B. Paine
West Warren	Thorndike Co.	P. Y. DeNormandie, Treas.
Whitinsville	Whitin Machine Works	E. Kent Swift, Treas.
Worcester	Crompton & Knowles Loom Wks.	Homer Gage, Pres.
Worcester	Curtis & Marble Machine Co.	Edwin H. Marble, Pres.
Worcester	Howard Bros. Mfg. Co.	H. Midgley, Pres. & Gen. Mgr.

## NEW HAMPSHIRE

Greenville	Columbian Mfg. Co.	Francis W. Fabyan, Treas.
Nashua	Nashua Mfg. Co.	Frederic Amory, Treas.
Nashua	Wonalancet Co.	James R. Everett, Vice Pres. & Gen. Mgr.
Newmarket	Newmarket Mfg. Co.	Charles Walcott, Treas.
Suncook	Suncook Mills	W. Rodman Peabody, Treas.

## NEW JERSEY

Lodi	United Piece Dye Works	Albert Blum, Treas.
Passaic	Brighton Mills	William L. Lyall, Pres.
Passaic	Newport Chemical Wks., Inc.	Elvin H. Kilheffer, Vice Pres.

## NEW YORK

Cohoes	Harmony Mills	Albert Greene Duncan, Treas.
Ithaca	Morse Chain Co.	F. L. Morse, Treas.
		John S. White
New York City	The Chemical Co. of America	Chas. Kendall, Sec.
New York City	Corn Products Refining Co.	Charles P. Slocum
New York City	Deering, Milliken & Co., Inc.	A. L. Fitzpatrick, Vice Pres.
New York City	Harding, Tilton & Co.	Newell W. Tilton
New York City	Minot, Hooper & Co.	Thomas W. Slocum
New York City	National Aniline & Chemical Co.	W. M. Vermilye, Executive Vice Pres.
New York City	Sanderson & Porter	F. G. Coburn, Mgr.
New York City	Ridley Watts & Co.	Ridley Watts
New York City	Clarence Whitman & Son, Inc.	C. Morton Whitman, Vice Pres.
New York Mills	New York Mills Corp.	A. F. Hobbs, Vice Pres.
Victory Mills	American Mfg. Co.	Francis Lynch, Agent

## PENNSYLVANIA

Chester	Aberfoyle Mfg. Co.	Charles L. Gilliland, Treas.
Philadelphia	H. W. Butterworth & Sons Co.	Harry W. Butterworth, Pres.
Philadelphia	Day & Zimmermann, Inc.	Chas. Penrose, Asst. Gen. Mgr.
Philadelphia	Franklin D'Olier & Co., Inc.	Franklin D'Olier, Pres. & Treas.
Philadelphia	John Farnum Co.	John Packard, Treas. & Sec.
Philadelphia	Charles J. Webb Sons Co.	Andrew S. Webb, Treas.

## RHODE ISLAND

Central Falls . . .	Waypoysset Mfg. Co. . . . .	Harold C. Burnefield, Treas.
Centreville . . .	Warwick Mills . . . . .	Charles O. Richardson, Treas.
Esmond . . . . .	The Esmond Mills . . . . .	Dexter Stevens, Mgr.
Forestdale . . .	Forestdale Mfg. Co. . . . .	William B. Orr, Treas.
Pawtucket . . .	Crown Mfg. Co. . . . .	Benjamin C. Chace, Mgr.
Pawtucket . . .	Jenckes Spinning Co. . . . .	Frederick L. Jenckes, Pres.
Pawtucket . . .	Robert D. Mason Co. . . . .	Frederic R. Mason, Pres.
Phenix . . . . .	Interlaken Mills . . . . .	Harris H. Bucklin, Asst. Treas.
Providence . . .	T. A. Francis & Co. . . . .	T. A. Francis
Providence . . .	R. L. Greene Paper Co. . . . .	N. L. R. Gardner, Pres.
Providence . . .	Manyville Co. . . . .	Chas. H. Merriman, Jr., Treas.
Providence . . .	Providence Dyeing, Bleaching & Calendering Co. . . . .	John P. Farnsworth, Pres.
Saylesville . . .	Lorraine Mfg. Co. . . . .	James R. MacColl, Pres.
Valley Falls . . .	Hansahoe Mfg. Co. . . . .	Walker Wadsworth, Agt.
Warren . . . . .	Warren Mfg. Co. . . . .	Wm. S. Pepperell, Asst. Treas.
Woonsocket . . .	Nyanza Mills . . . . .	Nathaniel F. Ayer, Treas.

## TEXAS

Houston . . . . .	Anderson, Clayton & Co. . . . .	John Hopkins
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## VERMONT

Brattleboro . . .	Fort Dummer Mills . . . . .	Edward G. Chace, Treas.
Burlington . . .	Queen City Cotton Co. . . . .	Andrew McLean Young, Treas.

## RECAPITULATION

California . . . . .	1
Connecticut . . . . .	13
Illinois . . . . .	1
Maine . . . . .	8
Massachusetts . . . . .	99
New Hampshire . . . . .	5
New Jersey . . . . .	4
New York . . . . .	13
Pennsylvania . . . . .	6
Rhode Island . . . . .	16
Texas . . . . .	1
Vermont . . . . .	2
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	169

## RECAPITULATION OF MEMBERSHIP

## By CLASSES

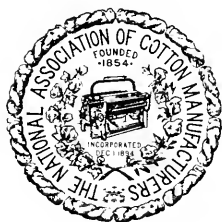
Honorary members . . . . .	4
Life members . . . . .	33
Active members . . . . .	597
Associate members . . . . .	201
Technical members . . . . .	3
	<hr/>
Sustaining members . . . . .	838
	169
Total . . . . .	<hr/>
	1,007

COTTON MANUFACTURERS

# Manual

STATISTICAL — TECHNICAL

1924









# STATISTICAL

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## FOREWORD

In the Statistical Section of the Year Book for 1924 the Statistical Committee presents a work which by progressive stages has developed to a point where it presents the best picture obtainable of the industry in America for the period 1923 and its relations to previous years. The book will answer most of the questions which students, the public and our members may be called upon to answer regarding our industry. The statistics will be found to cover the construction of a cotton mill, raw materials, yarns, cloth and finished goods, production, consumption and trade.

Statistics are holding an important position in business. Economics are studied as never before, and some conclusions drawn from them are correct, while others are very wrong and misleading. Business cycles, index figures, industrial economic service companies have presented a confusing array of statistics during the last few years. Because of the war and its readjustments these statistics do not represent normal, and many conclusions must be discounted.

The Year Book is a reliable source of information, presenting only facts, and has great value to all interested in the cotton textile industry. It is presented for your consideration and study and with the hope that it may be of considerable value in helping you to solve the problems of construction, purchase, administration and sale of your textile products during the coming year.

RUSSELL B. LOWE, *Chairman,*  
*Statistical Committee.*

### Acknowledgment of Co-operation

The preparation of the Statistical Section of this Year Book has been made possible by the generous co-operation of many governmental authorities in this country and abroad, and many firms and individuals in the cotton trade throughout the world. Special acknowledgment is due the Bureau of the Census and Bureau of Foreign and Domestic Commerce, especially, Textile Division, of the United States Department of Commerce; Weather Bureau, Bureau of Agricultural Economics, and Bureau of Entomology of the United States Department of Agriculture; Bureau of Labor Statistics and Women's Bureau of the United States Department of Labor; American Trade Commissioner at London, England, and Government commercial and consular representatives at other foreign centres; Egyptian Ministry of Agriculture; Egyptian Ministry of Finance; Indian Department of Statistics; British Board of Trade; New York Cotton Exchange; New Orleans Cotton Exchange; Liverpool Cotton Association; Manchester Cotton Association, Ltd.; Alexandria General Produce Association; New York *Daily News Record*; *Journal of Commerce*; *Textile World*; New Bedford *Standard*; Comtelburo Ltd.'s Annual Cotton Hand Book; Shepperson's Cotton Facts; Merchants National Bank of Boston; International Federation of Master Cotton Spinners' and Manufacturers' Associations; Fall River Cotton Manufacturers' Association; Mill Owners' Association of Bombay, India; Japan Cotton Spinners' Association; George H. McFadden Brothers, Boston, Mass.; Lockwood, Greene & Co., Inc., Boston, Mass.; Sanford & Kelley, New Bedford, Mass.; G. M. Haffards & Company, Fall River, Mass.; Frederick B. Macy & Company, New Bedford, Mass.; C. H. Pope & Company, New York, N. Y.; Prof. John A. Todd of London, England; Harvard Bureau of Business Research; and Associated Knit Underwear Manufacturers of America.

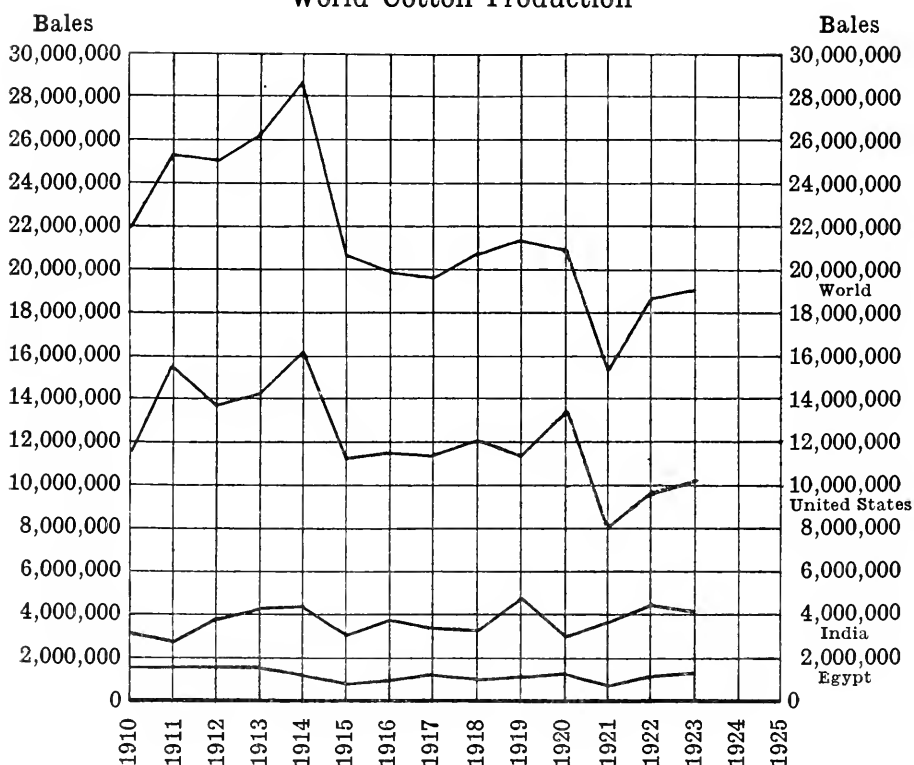
# World Cotton Production and Consumption

[In bales of 478 pounds lint]

United States Department of Commerce

YEARS	World Production (Bales)	CONSUMPTION			PER CENT OF WORLD TOTAL CONSUMED BY—		
		World (Bales)	European (Bales)	United States (Bales)	Europe	United States	Other Countries
1909-10	16,988,000	19,164,000	10,295,000	4,530,000	54	24	22
1910-11	18,856,000	19,888,000	11,040,000	4,408,000	56	22	22
1911-12	22,247,000	21,534,000	11,998,000	5,026,000	56	23	21
1912-13	21,550,000	22,055,000	12,158,000	5,575,000	55	25	20
1913-14	22,612,000	22,198,000	12,029,000	5,465,000	51	25	21
1914-15	24,861,000	20,670,000	10,606,000	5,485,000	51	26	23
1915-16	18,461,000	21,978,000	10,878,000	6,270,000	50	28	22
1916-17	18,924,000	21,408,000	9,044,000	6,653,000	43	32	25
1917-18	18,141,000	18,515,000	6,621,000	6,435,000	36	35	29
1918-19	18,765,000	16,704,000	5,962,000	5,831,000	36	35	29
1919-20	20,219,000	19,300,000	7,700,000	6,485,000	40	34	26
1920-21	19,675,000	16,905,000	6,735,000	4,905,000	40	29	31
1921-22	14,684,000	20,635,000	8,133,000	5,708,000	41	28	31
1922-23	17,647,000	21,041,000	7,995,000	6,490,000	38	31	31
1923-24	18,075,000	—	—	—	—	—	—

## World Cotton Production



The above chart is based on the table on the following page.

## World Production of Cotton

[In bales of 478 pounds net]

United States Department of Agriculture

Year	United States	India <sup>1</sup>	Russia	Egypt	China <sup>2</sup>	Brazil	Mexico	Peru	All Other Countries	Total
1910	11,609,000	3,254,000	1,006,000	1,555,000	3,467,000 <sup>3</sup>	297,000 <sup>3</sup>	200,000	88,000 <sup>3</sup>	439,000	21,915,000
1911	15,993,000	2,730,000	969,000	1,530,000	3,437,000 <sup>3</sup>	300,000 <sup>3</sup>	160,000	96,000 <sup>3</sup>	441,000	25,356,000
1912	13,703,000	3,702,000	946,000	1,554,000	3,931,000 <sup>3</sup>	348,000 <sup>3</sup>	240,000	112,000	507,000	25,043,000
1913	14,156,000	4,239,000	1,026,000	1,588,000	4,000,000 <sup>3</sup>	397,000 <sup>3</sup>	205,000	133,000	515,000	26,259,000
1914	16,135,000	4,359,000	1,270,000	1,337,000	4,500,000	387,000 <sup>3</sup>	108,000	129,000	462,000	28,687,000
1915	11,192,000	3,128,000	1,512,000	989,000	3,000,000 <sup>3</sup>	282,000	95,000	113,000	378,000	20,689,000
1916	11,450,000	3,759,000	1,199,000	1,048,000	1,534,000	281,000	163,000	127,000	344,000	19,845,000
1917	11,302,000	3,393,000	634,000	1,304,000	2,092,000	345,000	135,000	125,000	345,000	19,675,000
1918	12,041,000	3,328,000	161,000	999,000	3,053,000	339,000	263,000	142,000	347,000	20,613,000
1919	11,421,000	4,853,000	81,000	1,155,000	2,599,000	506,000	199,000	155,000	415,000	21,384,000
1920	13,440,000	3,013,000	58,000	1,251,000	1,883,000	370,000	188,000	161,000	508,000	20,875,000
1921	7,954,000	3,748,000	43,000	902,000	1,517,000	505,000	147,000	157,000	357,000	15,330,000
1922	9,762,000	4,348,000	55,000	1,170,000	2,048,000	553,000	178,000	137,000	454,000	18,705,000
1923 <sup>4</sup>	10,128,000	4,209,000	200,000	1,213,000	2,200,000	500,000	138,000	130,000	397,000	19,115,000

<sup>1</sup> Total Indian production.<sup>2</sup> Estimates which include production in the most important provinces where the commercial crop is grown.<sup>3</sup> Unofficial.<sup>4</sup> Advance estimates subject to correction.

# **Estimated Cotton Production of Minor Producing Areas — Crop of 1922-23**

[In bales of 478 pounds net]

Textile Division, Bureau of Foreign and Domestic Commerce

Guatemala . . . . .	646
Colombia . . . . .	5,000
Venezuela . . . . .	10,000
Ecuador . . . . .	8,000
Paraguay . . . . .	4,000
Argentina . . . . .	25,000
Haiti . . . . .	15,000
Other West Indies . . . . .	5,180
Greece . . . . .	13,000
Malta . . . . .	161
Cyprus . . . . .	1,276
Jugoslavia . . . . .	858
Bulgaria . . . . .	3,600
Italy . . . . .	4,600
Japan . . . . .	4,000
Korea . . . . .	103,000
French Indo-China . . . . .	10,000
Siam . . . . .	3,000
Afghanistan . . . . .	5,000
Persia . . . . .	10,000
Turkey . . . . .	50,000
Dutch East Indies . . . . .	10,000
New Hebrides . . . . .	3,000
Australia . . . . .	10,000
Other Islands . . . . .	200
Uganda . . . . .	75,000
Tanganyika . . . . .	6,004
Nigeria . . . . .	13,000
British South Africa . . . . .	3,138
Dahomey . . . . .	1,273
Sudan . . . . .	21,000
French Guinea . . . . .	172
Belgian Congo . . . . .	4,600
Togoland . . . . .	4,600
Nyasaland . . . . .	4,601
Mozambique . . . . .	1,000
Algeria . . . . .	272
French Soudan . . . . .	500
Ivory Coast . . . . .	100
Eritrea . . . . .	692
Italian Somaliland . . . . .	1,192
Gold Coast . . . . .	50
Angola . . . . .	2,000
Kenya . . . . .	460

# Source of Supply of Cotton according to Length of Staple

[Bales of 500 pounds; gross weight]

British Cotton Growing Committee and United States Bureau of Markets

Growths	Kind	Where Grown	Length of Staple (Inches)	Approximate Pre-war Supply (Bales)
I	Sea Island	Islands, South Carolina	1½-2½	8,000
	Sea Island	West Indies	1½-2½	4,000
	Sea Island	Islands, Florida and Georgia	1½-1½	70,000
II	Sea Island	West Indies	1½-1½	2,000
	Egyptian	Egypt	1½-1½	550,000
	Egyptian	Egypt	1½-1½	700,000
III	Egyptian	Sudan	1-1½	20,000
	American	Mississippi Delta, etc.	1½-1½	200,000
	African	Nyasaland, Uganda, and East and South Africa	1½-1½	40,000
	Peruvian	Peru	1-1½	125,000
	American, <sup>1</sup>	United States	5-1½	15,000,000
	Mexican	Mexico	5-1½	150,000
IV	Brazilian	Brazil	3-1½	300,000
	Russian	Russia	1-1½	500,000
	West African	West Africa	1-1½	15,000
	Levant	Levant	3-1½	100,000
	Indian	India	4-1½	400,000
	Chinese and Korean	China and Chosen (Korea)	1-1½	250,000
V	Indian	India	3-7	4,500,000
	Russian	Russia	3-7	750,000
	Chinese	China	3-3	1,800,000
Approximate world's pre-war supply			25,484,000	

<sup>1</sup> Including American-Egyptian cotton.

Length<sup>1</sup> of Staple of the World's Cotton by Varieties

[In inches]

United States Department of Agriculture

VARIETY	Minimum	Average	Maximum	Variety	Minimum	Average	Maximum
United States:				India:			
Sea Island . . . . .	1 $\frac{1}{2}$	—	2 $\frac{1}{8}$	Cambodia . . . . .	$\frac{3}{8}$	—	1 $\frac{1}{8}$
Meade . . . . .	1 $\frac{3}{8}$	—	1 $\frac{3}{4}$	Karunganni . . . . .	$\frac{3}{8}$	—	1
American-Egyptian . . . . .	1 $\frac{1}{2}$	—	1 $\frac{3}{4}$	Breath . . . . .	$\frac{3}{8}$	—	1
Upland long staple . . . . .	1 $\frac{1}{8}$	—	1 $\frac{3}{8}$	Oonras . . . . .	$\frac{1}{2}$	—	$\frac{5}{8}$
Upland short staple . . . . .	$\frac{3}{8}$	—	1 $\frac{1}{16}$	Dholeras . . . . .	$\frac{3}{8}$	—	$\frac{5}{8}$
Mexico . . . . .	—	1	—	Kumtas . . . . .	$\frac{7}{8}$	—	—
Egypt:				Western and Northern Timevellys . . . . .	$\frac{3}{4}$	—	$\frac{5}{8}$
Sakels . . . . .	1 $\frac{3}{8}$	—	1 $\frac{5}{8}$	Bengals . . . . .	$\frac{3}{4}$	—	$\frac{5}{8}$
Brown and uppers . . . . .	1 $\frac{1}{8}$	—	1 $\frac{3}{8}$	Sind-Punjab . . . . .	$\frac{3}{8}$	—	$\frac{5}{8}$
China:				Brazil:			
Native . . . . .	—	$\frac{5}{8}$	$\frac{7}{8}$	Serido or Mocó . . . . .	$\frac{1}{8}$	—	1 $\frac{3}{4}$
American . . . . .	—	—	1	Verdão . . . . .	$\frac{1}{8}$	—	1 $\frac{3}{4}$
Russia:				Infiro . . . . .	1 $\frac{1}{8}$	—	—
Native . . . . .	$\frac{3}{8}$	—	$\frac{3}{4}$	Quebradinho . . . . .	1 $\frac{5}{16}$	—	1 $\frac{3}{8}$
American . . . . .	—	—	1 $\frac{1}{8}$	Maceo or Garga . . . . .	1 $\frac{1}{8}$	—	—
Peru:				Cleveland . . . . .	—	—	—
Full rough (aspero) . . . . .	—	1 $\frac{1}{8}$	—	Russel Big Boll . . . . .	1 $\frac{1}{16}$	—	1 $\frac{3}{16}$
Semi-rough (semi-aspero) . . . . .	—	1 $\frac{3}{16}$	—	Express . . . . .	—	—	—
Egipto (suave) . . . . .	1 $\frac{1}{16}$	—	1 $\frac{1}{8}$	Webber . . . . .	—	—	—
Tanguis . . . . .	—	1 $\frac{5}{16}$	1 $\frac{1}{2}$	Herbacco . . . . .	$\frac{7}{8}$	—	1
Mitafi . . . . .	—	1 $\frac{1}{4}$	—	Durango . . . . .	1 $\frac{1}{16}$	—	1 $\frac{1}{4}$
				Sea Island . . . . .	—	1 $\frac{1}{4}$	—
				Campo Brito . . . . .	—	1 $\frac{3}{8}$	—

<sup>1</sup> Figures are only approximate. It must be noted that opinions frequently differ as to length of certain varieties.



# Approximate Dates of Cotton Planting and Picking by Countries

United States Department of Agriculture

COUNTRY	PLANTING			PICKING		
	Beginning	Principal Months	End	Beginning	Principal Months	End
United States <sup>1</sup>	March 15	—	May 25	July 1	—	Dec. 31
Mexico:						
Laguna District	—	—	March	July	—	Dec.
Lower California	March	—	July	Sept.	—	Feb.
Egypt	Feb.	—	May	Aug.	—	Dec.
China	May	—	—	Oct.	—	—
Russia	—	March–April	—	Aug.	—	Oct.
India	—	March–Dec.	—	—	Oct.–April	—
Brazil:						
North	Dec.	—	April	Aug.	—	Dec.
South	Sept.	—	Nov.	March	—	May
Peru <sup>2</sup>	—	Oct.–Dec.	—	—	May–Sept.	—

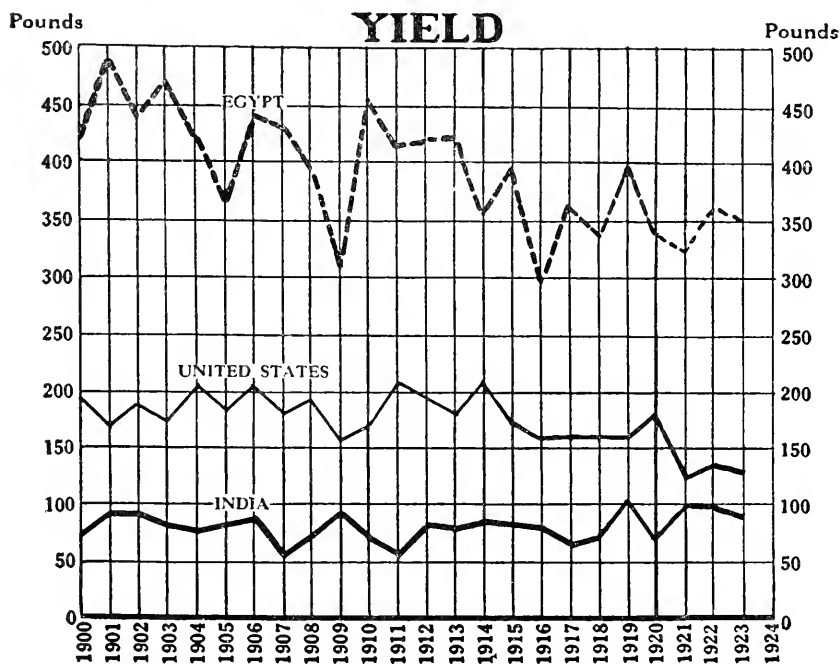
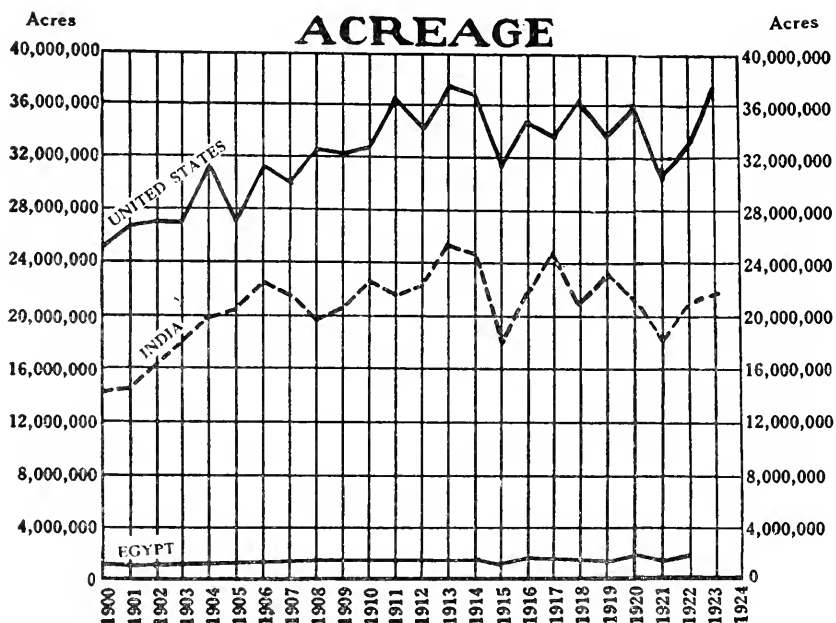
<sup>1</sup> About 95 per cent of the crop is picked from August 1 to November 30.

<sup>2</sup> Planting and picking are carried on all the year. Some varieties yield several crops before they are replanted.

## Weights of Cotton Bales by Varieties

Variety	Pounds
Egyptian	750
American	500
Chinese	460
East Indian	410
African	410
West Indian	405
Sea Island	386
Brazilian	340
Peruvian	230

# Cotton Acreage and Yield per Acre of Egypt, India, and the United States



The above charts are based on the first table on the following page.

# Cotton Acreage and Yield per Acre of Egypt, India and the United States

United States Bureau of the Census and Department of Agriculture

YEAR	EGYPT		INDIA		UNITED STATES	
	Acres	Pounds	Acres	Pounds	Acres	Pounds
1900 . . . . .	1,277,000	422	14,231,150	76	24,933,000	194
1901 . . . . .	1,297,000	487	14,506,295	91	26,774,000	170
1902 . . . . .	1,324,000	437	16,581,046	90	27,175,000	187
1903 . . . . .	1,383,000	466	18,025,000	79	27,052,000	174
1904 . . . . .	1,491,000	420	19,918,000	77	31,215,000	206
1905 . . . . .	1,626,000	363	20,401,000	83	27,110,000	187
1906 . . . . .	1,564,000	440	22,488,000	87	31,374,000	202
1907 . . . . .	1,664,000	431	21,630,000	58	29,660,000	179
1908 . . . . .	1,703,000	393	19,999,000	74	32,444,000	195
1909 . . . . .	1,619,000	309	20,545,000	92	32,044,000	154
1910 . . . . .	1,664,000	453	22,596,000	68	32,403,000	171
1911 . . . . .	1,776,000	412	21,615,000	61	36,045,000	208
1912 . . . . .	1,787,000	417	22,028,000	84	34,283,000	191
1913 . . . . .	1,789,000	425	25,020,000	81	37,089,000	182
1914 . . . . .	1,823,000	353	24,595,000	85	36,832,000	209
1915 . . . . .	1,231,000	387	17,746,000	84	31,412,000	170
1916 . . . . .	1,718,000	295	21,745,000	83	34,985,000	157
1917 . . . . .	1,741,000	359	25,188,000	64	33,841,000	160
1918 . . . . .	1,366,000	338	21,038,000	76	36,008,000	160
1919 . . . . .	1,633,000	399	23,353,000	99	33,566,000	161
1920 . . . . .	1,897,000	336	21,341,000	68	35,878,000	178
1921 . . . . .	1,341,000	329	18,451,000	97	30,509,000	125
1922 . . . . .	1,868,000	360	21,077,000	98	33,036,000	142
1923 . . . . .	1,648,000 <sup>1</sup>	351 <sup>1</sup>	21,845,000 <sup>1</sup>	90 <sup>1</sup>	37,420,000 <sup>1</sup>	129 <sup>1</sup>

<sup>1</sup> Advance estimates.

## Acreage planted to Egyptian Cotton, by Varieties

[Expressed in feddans<sup>1</sup>]

Reported by Egyptian Ministry of Agriculture

	1918	1919	1920	1921	1922	1923
Sakellaridis . . . . .	952,481	1,146,443	1,270,481	995,479	1,357,197	1,162,036
Ashmouni (Uppers) . . . . .	273,936	334,160	283,906	170,514	276,193	287,171
Mitaffi . . . . .	36,240	35,145	44,068	6,771	8,178	5,599
Nubari . . . . .	21,587	23,611	37,320	8,645	11,084	9,862
Afifi Assil . . . . .	20,736	21,003	30,051	5,839	7,878	7,246
Abassi . . . . .	4,871	3,718	4,293	1,267	2,274	1,772
Joanovich . . . . .	223	97	2,087	300	335	4,082
Various . . . . .	5,498	9,485	169,870	103,063	136,704	110,332
Total . . . . .	1,315,572	1,573,662	1,827,870	1,291,878	1,799,843	1,588,100

<sup>1</sup> 1 feddan = 1,038 acres.

## Acreage of Cotton planted, Acreage abandoned, and Acreage harvested in the United States

Revised estimates of United States Department of Agriculture

YEAR	Acreage planted <sup>1</sup>	Acreage abandoned	Acreage harvested
1912 . . . . .	34,766,000	483,000	34,283,000
1913 . . . . .	37,458,000	369,000	37,089,000
1914 . . . . .	37,406,000	574,000	36,832,000
1915 . . . . .	32,107,000	695,000	31,412,000
1916 . . . . .	36,052,000	1,067,000	34,985,000
1917 . . . . .	34,925,000	1,084,000	33,841,000
1918 . . . . .	37,207,000	1,199,000	36,008,000
1919 . . . . .	35,133,000	1,567,000	33,566,000
1920 . . . . .	37,043,000	1,165,000	35,878,000
1921 . . . . .	31,678,000	1,169,000	30,509,000
1922 . . . . .	34,016,000	980,000	33,036,000
1923 <sup>2</sup> . . . . .	38,287,000	867,000	37,420,000

<sup>1</sup> Acreage planted is computed as of June 25 each year.

<sup>2</sup> 1923 figures are subject to revision.

## Acreage of Cotton harvested in the United States

United States Department of Agriculture

STATE	THOUSANDS OF ACRES						
	1917	1918	1919	1920	1921	1922	1923 <sup>1</sup>
Total . . . . .	33,841	36,008	33,566	35,878	30,509	33,036	37,420
Alabama . . . . .	1,977	2,570	2,791	2,858	2,235	2,771	3,149
Arizona . . . . .	41	95	107	230	90	101	128
Arkansas . . . . .	2,740	2,991	2,725	2,980	2,382	2,799	3,054
California <sup>2</sup> . . . . .	136	173	185	275	140	202	233
Florida . . . . .	183	167	103	100	65	118	143
Georgia . . . . .	5,195	5,341	5,220	4,900	4,172	3,418	3,433
Louisiana . . . . .	1,454	1,683	1,527	1,470	1,168	1,140	1,395
Mississippi . . . . .	2,788	3,138	2,848	2,950	2,628	3,014	3,298
Missouri . . . . .	153	148	125	136	103	198	339
North Carolina . . . . .	1,515	1,600	1,490	1,587	1,403	1,625	1,678
Oklahoma . . . . .	2,783	2,998	2,424	2,749	2,206	2,915	3,295
South Carolina . . . . .	2,837	3,001	2,835	2,964	2,571	1,912	2,030
Tennessee . . . . .	882	902	758	840	634	985	1,167
Texas . . . . .	11,092	11,233	10,476	11,898	10,745	11,874	14,081
Virginia . . . . .	50	44	42	42	34	55	73
All other . . . . .	15	12	10	24	18	44	72

<sup>1</sup> Preliminary estimate.

<sup>2</sup> Lower California (148,000 acres in 1923; 135,000 in 1922; 85,000 in 1921; 125,000 in 1920; 103,000 in 1919; and 88,000 in 1918) included in California figures, but excluded from United States totals.

# Acreage and Production of Cotton in Egypt

From statistics compiled by Egyptian Ministry of Finance and United States Bureau of the Census

YEAR	Acreage in Feddans <sup>1</sup>	Acreage in Acres	Crop in Kantars Gross Weight <sup>2</sup>	Crop in Equivalent 500-Pound Bales	Yield in Kantars per Feddan	Yield in Pounds per Acre
1911 . . .	1,711,241	1,776,000	7,386,000	1,463,000	4.32	412
1912 . . .	1,721,817	1,787,000	7,499,000	1,492,000	4.35	417
1913 . . .	1,723,094	1,789,000	7,664,000	1,522,000	4.44	425
1914 . . .	1,755,270	1,823,000	6,451,000	1,286,000	3.67	353
1915 . . .	1,186,004	1,231,000	4,775,000	952,000	4.03	387
1916 . . .	1,655,512	1,718,000	5,060,000	1,012,000	3.06	295
1917 . . .	1,677,310	1,741,000	6,293,000	1,249,000	3.75	359
1918 . . .	1,315,572	1,366,000	4,821,000	955,000	3.66	338
1919 . . .	1,573,662	1,633,000	5,572,000	1,248,000	3.54	399
1920 . . .	1,827,870	1,897,000	6,036,000	1,231,000	3.30	336
1921 . . .	1,291,878	1,341,000	4,353,000	862,000	3.37	329
1922 . . .	1,799,843	1,868,000	6,713,000	1,119,000	3.73	360
1923 . . .	1,588,100 <sup>3</sup>	1,648,000 <sup>3</sup>	5,844,000 <sup>3</sup>	1,160,000 <sup>3</sup>	3.68 <sup>3</sup>	351 <sup>3</sup>

<sup>1</sup> 1 feddan = 1.038 acres.

<sup>2</sup> 1 kantar = 99.049 pounds.

<sup>3</sup> Preliminary estimates.

# Acreage and Crops of American-Egyptian Cotton

[Crops in 500-pound bales gross]

From statistics compiled by United States Bureau of the Census

YEAR	Acreage planted	Crop
1912 . . . . .	520	375
1913 . . . . .	3,500	2,135
1914 . . . . .	12,000	6,187
1915 . . . . .	2,330	1,095
1916 . . . . .	5,477	3,331
1917 . . . . .	33,000	15,966
1918 . . . . .	80,000	40,343
1919 . . . . .	90,000	42,374
1920 . . . . .	240,000	90,745
1921 . . . . .	80,000	39,395
1922 . . . . .	77,000	35,463
1923 . . . . .	43,000	23,946

NOTE. — 1923 statistics are advance estimates.

**Dates of Earliest Killing Frosts in Autumn, and Latest Killing Frosts in Spring, from Beginning of Record kept by United States Weather Bureau to December 31, 1923**

	Years recorded	Earliest Date in Autumn	Average Date in Autumn	Latest Date in Spring	Average Date in Spring
Virginia:					
Newport News . . . .	25	Oct. 3	Nov. 6	April 26	March 28
Norfolk . . . . .	51	Oct. 15	Nov. 17	April 26	March 25
Richmond . . . . .	26	Oct. 12	Oct. 31	April 26	April 7
North Carolina:					
Greensboro . . . . .	21	Oct. 11	Oct. 30	April 26	April 9
Raleigh . . . . .	37	Oct. 8	Nov. 2	April 26	March 31
Wilmington . . . . .	53	Oct. 16	Nov. 13	May 1	March 23
Charlotte . . . . .	45	Oct. 8	Nov. 5	April 26	March 28
Monroe . . . . .	28	Oct. 2	Oct. 19	May 10	April 14
South Carolina:					
Charleston . . . . .	53	Nov. 8	Dec. 10	April 2	Feb. 20
Columbia . . . . .	44	Oct. 30	Nov. 18	April 17	March 18
Greenwood . . . . .	27	Oct. 11	Nov. 8	April 17	March 25
Spartanburg . . . . .	34	Sept. 24	Nov. 1	April 17	March 30
Greenville . . . . .	29	Oct. 10	Nov. 2	April 24	April 3
Georgia:					
Macon . . . . .	24	Oct. 11	Nov. 7	April 18	March 23
Athens . . . . .	31	Oct. 11	Nov. 1	April 21	April 2
Augusta . . . . .	50	Oct. 21	Nov. 10	April 17	March 22
Savannah . . . . .	51	Oct. 25	Nov. 24	April 13	Feb. 26
Rome . . . . .	32	Oct. 11	Oct. 27	April 24	April 9
Columbus . . . . .	27	Oct. 11	Nov. 6	April 26	March 22
Gainesville . . . . .	28	Oct. 11	Oct. 27	April 24	April 9
Newnan . . . . .	29	Oct. 11	Nov. 5	April 26	April 5
Thomasville . . . . .	29	Oct. 21	Nov. 15	April 26	March 14
Florida:					
Gainesville . . . . .	27	Nov. 10	Dec. 3	April 2	Feb. 26
Jacksonville . . . . .	68	Nov. 12	Dec. 6	April 10	Feb. 16
Lake City . . . . .	32	Oct. 25	Nov. 28	April 26	March 10
Pensacola . . . . .	44	Oct. 27	Dec. 6	April 6	Feb. 22
Tallahassee . . . . .	34	Nov. 4	Dec. 1	April 10	March 4
Tampa . . . . .	34	Nov. 21	Jan. 3	April 7	Jan. 26
Alabama:					
Anniston . . . . .	19	Oct. 11	Nov. 1	April 25	March 24
Opelika . . . . .	30	Oct. 21	Nov. 11	April 17	March 20
Montgomery . . . . .	52	Oct. 21	Nov. 11	April 5	March 10
Selma . . . . .	27	Oct. 13	Nov. 10	April 26	March 16
Eufaula . . . . .	32	Oct. 21	Nov. 12	April 26	March 16
Mobile . . . . .	53	Oct. 31	Dec. 5	April 6	Feb. 17
Decatur . . . . .	29	Oct. 11	Nov. 2	April 26	March 28
Birmingham . . . . .	29	Oct. 21	Nov. 9	April 17	March 16
Tuscaloosa . . . . .	36	Oct. 21	Nov. 6	April 25	March 27
Thomasville . . . . .	27	Oct. 21	Nov. 10	April 26	March 17
Mississippi:					
Yazoo City . . . . .	30	Oct. 13	Nov. 2	April 25	March 20
Vicksburg . . . . .	53	Oct. 20	Nov. 12	April 6	March 4
Meridian . . . . .	34	Oct. 8	Nov. 5	April 25	March 18
Natchez . . . . .	30	Oct. 20	Nov. 14	April 25	March 14

**Dates of Earliest Killing Frosts in Autumn and Latest Killing Frosts in Spring, and Average Dates, etc. — (Concluded)**

	Years recorded	Earliest Date in Autumn	Average Date in Autumn	Latest Date in Spring	Average Date in Spring
Mississippi (Continued):					
Greenville . . . . .	33	Oct. 10	Nov. 6	April 26	March 19
Greenwood . . . . .	25	Oct. 13	Oct. 31	April 26	March 25
Columbus . . . . .	30	Oct. 11	Oct. 31	April 26	March 27
Louisiana:					
Baton Rouge . . . . .	38	Oct. 14	Nov. 18	April 5	Feb. 20
New Orleans . . . . .	51	Nov. 11	Dec. 16	March 27	Jan. 25
Monroe . . . . .	31	Oct. 10	Nov. 10	April 9	March 11
Natchez (see Mississippi)					
Shreveport . . . . .	51	Oct. 20	Nov. 10	April 9	March 6
Vicksburg (see Mississippi)					
Texas:					
Houston . . . . .	33	Oct. 25	Dec. 1	March 26	Feb. 17
Galveston . . . . .	52	Nov. 16	Dec. 26	March 1	Jan. 19
Corpus Christi . . . . .	37	Nov. 29	Dec. 28	March 19	Jan. 21
Luling . . . . .	33	Oct. 27	Nov. 21	April 9	March 6
Cuero . . . . .	32	Oct. 27	Nov. 23	April 5	Feb. 27
San Antonio . . . . .	38	Oct. 30	Nov. 28	April 5	Feb. 24
El Paso . . . . .	36	Oct. 27	Nov. 15	April 26	March 14
Abilene . . . . .	38	Oct. 19	Nov. 10	April 23	March 21
Amarillo . . . . .	32	Sept. 22	Oct. 29	May 23	April 17
Fort Worth . . . . .	29	Oct. 22	Nov. 12	April 9	March 11
Lampasas . . . . .	32	Oct. 9	Nov. 9	May 2	March 22
Taylor . . . . .	29	Oct. 30	Nov. 22	April 5	March 13
Temple . . . . .	33	Oct. 29	Nov. 18	April 9	March 10
Austin . . . . .	54	Oct. 28	Nov. 22	April 9	March 5
Waco . . . . .	34	Oct. 22	Nov. 12	April 9	March 12
Gainesville . . . . .	34	Oct. 9	Nov. 6	May 1	March 28
Dallas . . . . .	34	Oct. 8	Nov. 13	May 1	March 19
Waxahachie . . . . .	26	Oct. 9	Nov. 7	April 30	March 27
Corsicana . . . . .	34	Oct. 22	Nov. 14	May 1	March 15
Palestine . . . . .	41	Oct. 20	Nov. 13	April 5	March 13
Nacogdoches . . . . .	24	Oct. 21	Nov. 12	April 25	March 18
Greenville . . . . .	23	Oct. 19	Nov. 12	April 26	March 19
Paris . . . . .	32	Oct. 9	Nov. 11	April 17	March 19
Arkansas:					
Fort Smith . . . . .	42	Oct. 9	Nov. 5	April 17	March 21
Little Rock . . . . .	44	Oct. 22	Nov. 13	April 26	March 18
Pine Bluff . . . . .	31	Oct. 11	Nov. 4	April 25	March 24
Texarkana . . . . .	32	Oct. 9	Nov. 9	April 17	March 20
Tennessee:					
Memphis . . . . .	52	Oct. 2	Nov. 3	April 25	March 22
Nashville . . . . .	53	Oct. 8	Oct. 27	April 24	April 2
Chattanooga . . . . .	45	Sept. 30	Oct. 26	May 14	April 2
Decatur . . . . .	28	Oct. 2	Oct. 23	May 14	April 18
Knoxville . . . . .	53	Oct. 1	Oct. 28	April 26	April 2
Oklahoma:					
Muskogee . . . . .	23	Oct. 10	Nov. 3	April 21	March 22
Oklahoma . . . . .	33	Oct. 7	Nov. 2	April 30	March 31
Missouri:					
St. Louis . . . . .	51	Sept. 30	Oct. 27	May 22	April 4

## Dates of Earliest Killing Frosts in Autumn in the Cotton Belt of the United States during the Past Six Years

Compiled from Official Reports of the United States Weather Bureau

	1918	1919	1920	1921	1922	1923
North Carolina:						
Charlotte . . .	Nov. 13	Nov. 14	Oct. 30	Nov. 13	Nov. 23	Nov. 9
Rockingham . .	Nov. 24 <sup>1</sup>	Nov. 15	Oct. 30	Oct. 14	Nov. 11	Nov. 2 <sup>1</sup>
Raleigh . . .	Nov. 24	Nov. 14	Nov. 13	Nov. 13	Nov. 22	Nov. 2
Goldshoro . . .	Nov. 8 <sup>1</sup>	Nov. 14 <sup>1</sup>	Oct. 30	Oct. 14 <sup>1</sup>	Nov. 11 <sup>1</sup>	Nov. 9 <sup>1</sup>
South Carolina:						
Charleston . . .	Dec. 29	Dec. 15	Dec. 29	None	Nov. 29	Nov. 10
Columbia . . .	Dec. 26	Nov. 15	Nov. 13	Dec. 30	Nov. 22	Nov. 9
Georgia:						
Atlanta . . .	Dec. 26	Nov. 14	Nov. 13	Nov. 11	Nov. 21	Nov. 9
Augusta . . .	Dec. 26	Nov. 15	Nov. 14	Nov. 13	Nov. 22	Nov. 10
Savannah . . .	Dec. 26	Dec. 16	Dec. 25	None	Nov. 29	Nov. 10
Columbus . . .	Dec. 26	Dec. 15	Oct. 30	Nov. 13	Nov. 29	Nov. 10
Rome . . .	Nov. 14	Nov. 14	Oct. 30	Nov. 11	Nov. 10	Nov. 8
Alabama:						
Eufaula . . .	Dec. 5	Dec. 16	Nov. 17	Nov. 13	Nov. 29	Nov. 10
Mobile . . .	Dec. 26	Dec. 15 <sup>1</sup>	Nov. 17	None	None	Jan. 6 <sup>2</sup>
Montgomery . .	Dec. 2	Dec. 16	Nov. 17	Dec. 5	Nov. 29	Dec. 7
Mississippi:						
Vicksburg . . .	Nov. 24	Nov. 14	Nov. 13	Dec. 18	Dec. 19	Nov. 30
Greenville . . .	Nov. 1	Nov. 13	Nov. 12	Nov. 3	Nov. 26	Nov. 7
Louisiana:						
New Orleans . .	None	None	None	None	None	Jan. 6 <sup>2</sup>
Shreveport . . .	Nov. 24	Nov. 13	Nov. 13	Nov. 10	Nov. 21	Dec. 6
Texas:						
Galveston . . .	None	Dec. 10	None	None	None	Jan. 7 <sup>2</sup>
Palestine . . .	Nov. 24	Nov. 14	Nov. 16	Dec. 18	Dec. 19	Dec. 14
San Antonio . .	Nov. 28	Dec. 10	Nov. 16	Dec. 9	None	Jan. 1 <sup>2</sup>
Fort Worth . . .	Nov. 22	Nov. 12	Nov. 12	Nov. 19	Dec. 10	Dec. 14
Arkansas:						
Little Rock . . .	Nov. 23	Nov. 13	Nov. 12	Nov. 12	Nov. 26	Nov. 30
Fort Smith . . .	Nov. 1	Nov. 13	Nov. 3	Nov. 10	Nov. 26	Nov. 29
Tennessee:						
Memphis . . .	Nov. 24	Nov. 13	Nov. 12	Nov. 12	Nov. 16	Oct. 31
Nashville . . .	Nov. 2	Nov. 13	Oct. 29	Nov. 3	Nov. 21	Nov. 1
Chattanooga . .	Nov. 25	Nov. 14	Nov. 15	Nov. 11	Nov. 21	Nov. 9
Oklahoma:						
Ardmore . . .	Nov. 24	Nov. 12	Nov. 12	Nov. 10	Nov. 20	Nov. 30 <sup>1</sup>
Oklahoma . . .	Nov. 22	Nov. 12	Nov. 11	Nov. 10	Nov. 14	Oct. 31
Mangum . . .	Nov. 23	Nov. 12	Nov. 2	Nov. 10	Nov. 13	Nov. 6 <sup>1</sup>

<sup>1</sup> First date with temperature of 32° or below.

<sup>2</sup> 1924.



# Forecasts of American Cotton Crops issued by United States Department of Agriculture compared with Actual Yield and Production, and Amount of Variation of Forecasts from Actual Yield and Production

## Forecasts of Yield per Acre

YEAR	FORECASTS OF YIELD PER ACRE (POUNDS)					Actual Yield (Pounds)	PERCENTAGE OF VARIATION OF FORECASTS FROM ACTUAL YIELD				
	May 25	June 25	July 25	Aug. 25	Sept. 25		May 25	June 25	July 25	Aug. 25	Sept. 25
1923	-	142.6	143.9	134.8	137.7	128	-	-	-	-	-
1922	-	151	157	145	139	141.6	-	+7	+11	+2	+0
1921	-	152.2	148	127	118	126.9	-	+22	+19	+2	+2
1920	-	155.9	170.4	174.0	165.0	170.8	-	-13	-4	-3	-4
1919	-	156.4	156.8	159.8	158.0	158.2	+6	-3	-3	-1	-2
1918	171.3	199.8	177.3	145.2	154.1	155.9	-	+28	+13	-7	-2
1917	162.5	162.5	166.9	174.6	168.3	155.7	+2	+2	+4	+9	+5
1916	181.5	191.6	173.4	158.5	156.3	156.6	+16	+22	+11	+1	-3
1915	-	-	-	-	168.1	170.3	-	-	-	-	+1
1914	-	-	-	-	207.9	209.2	-	-	-	-	-1
1913	-	-	-	-	183.4	182.0	-	-	-	-	+1
1912	-	-	-	-	193.2	190.9	-	-	-	-	+1

<sup>1</sup> First forecast of yield per acre issued as of Sept. 25, 1915.

## Forecasts of Total Crop [500-pound gross bales, exclusive of linters]

YEAR	FORECASTS OF CROPS					Actual Production	AMOUNT OF VARIATION OF FORECASTS FROM ACTUAL PRODUCTION				
	June 25	July 25	Aug. 25	Sept. 25	Dec. Est.		June 25	July 25	Aug. 25	Sept. 25	Dec. Est.
1923	11,412,000	11,516,000	10,788,000	11,015,000	10,081,000	10,128,478 <sup>1</sup>	+1,283,522 <sup>2</sup>	+1,387,522 <sup>2</sup>	+659,522 <sup>2</sup>	+886,522 <sup>2</sup>	-47,478 <sup>2</sup>
1922	11,065,000	11,449,000	10,575,000	10,135,000	9,964,000	9,762,069	+1,379,931	+1,686,931	+812,931	+372,931	+191,931
1921	8,433,000	8,203,000	7,037,000	6,537,000	8,340,000	7,953,641	+1,409,359	+249,359	-916,641	-1,416,641	+386,359
1920	11,450,000	12,519,000	12,783,000	12,123,000	12,987,000	13,439,603	-1,989,603	-920,603	-656,603	-1,316,603	-452,603
1919	10,986,000	10,016,000	11,230,000	10,696,000	11,030,000	11,420,763	-434,763	-1,404,763	-190,763	-724,763	-390,763
1918	15,325,000	13,619,000	11,137,000	11,818,000	11,700,000	12,040,532	+3,284,468	+1,578,468	-903,532	-222,532	-340,532
1917	11,633,000	11,949,000	12,499,000	12,047,000	10,949,000	11,302,375	+336,625	+646,625	+1,196,625	+744,625	-353,375
1916	14,266,000	12,916,000	11,800,000	11,637,000	11,511,000	11,449,930	+2,816,070	+1,466,070	+350,070	+187,070	+61,070
1915	-	-	-	10,950,000	11,161,000	11,191,820	-	-	-	-241,820	-30,820
1914	-	-	-	-	15,966,000	16,134,930	-	-	-	-	-168,930
1913	-	-	-	-	13,677,000	14,156,486	-	-	-	-	-479,486
1912	-	-	-	-	13,820,000	13,703,421	-	-	-	-	+116,579

<sup>1</sup> March, 1924, report of cotton ginned.

<sup>2</sup> Based on March, 1924, report of cotton ginned.

<sup>3</sup> First monthly forecast made by Department of Agriculture was that of Sept. 25, 1915.

## Computation of Cotton Crop Condition

The following statement from the Bureau of Agricultural Economics outlines the method used to obtain the government cotton crop condition estimate:

The condition figures published by this Bureau are based upon a normal condition. A normal condition is such a condition as would be expected at the date to which the report relates if conditions are favorable to the crop; that is to say, assuming that good seed had been planted under favorable conditions and that the crop had not suffered material injury from drought, storms, insect pests, plant diseases, or other unfavorable influences. Normal is not an ideal condition, but represents something rather close to the average of good years. The bearing of condition is upon final yield per acre rather than upon total production, because condition does not involve the question of acreage.

The yield per acre to be expected from a condition of 100 per cent or normal for any month is determined each year by a study of the relation of condition in that month to final yield in previous years. The reported per cent of a normal June 25 condition would, of course, indicate a corresponding per cent of the established normal yield per acre for June 25. This promised yield per acre, being multiplied by the number of acres, gives an indication of total production. All such forecasts are based upon the assumption that conditions affecting the crop developing after the date of report will be average, and that the final yield will prove greater or less than the forecast according as such future influences prove more or less favorable than in an average year.

A condition in June of 71 would not necessarily indicate the same production as the same figure for the following month because conditions average higher in June than in July for most crops, and distinctly so for cotton. The comparison each month is with normal conditions for that month. While the conditions of 71 per cent normal in June might be 80 per cent of the June *average* condition, the same per cent of July normal might be 90 per cent of July *average* condition and indicate a correspondingly higher yield.

# Condition of American Cotton Crops on May 25

As reported by the United States Department of Agriculture

STATES	1917	1918	1919	1920	1921	1922	1923
Virginia . . . . .	75	89	89	71	77	91	79
North Carolina . . . . .	63	84	85	70	65	84	77
South Carolina . . . . .	70	80	78	68	58	67	64
Georgia . . . . .	69	78	81	55	63	71	65
Florida . . . . .	76	75	75	62	60	85	87
Alabama . . . . .	61	78	78	58	57	80	70
Mississippi . . . . .	66	86	73	65	60	75	70
Louisiana . . . . .	74	85	74	72	57	70	68
Texas . . . . .	74	82	76	60	71	61	77
Arkansas . . . . .	64	85	68	61	70	76	66
Tennessee . . . . .	63	90	64	60	69	79	70
Missouri . . . . .	73	79	70	64	75	90	54
Oklahoma . . . . .	77	86	65	70	74	67	63
California . . . . .	82	91	91	86	75	84	93
Arizona . . . . .	-	90	-	80	84	81	92
United States . . . . .	69.5	82.3	75.6	62.4	66.0	69.6	71.0

# Condition of American Cotton Crops on June 25

As reported by the United States Department of Agriculture

STATES	1917	1918	1919	1920	1921	1922	1923
Virginia . . . . .	82	85	82	73	70	85	90
North Carolina . . . . .	67	91	83	74	67	76	80
South Carolina . . . . .	71	83	78	74	65	60	64
Georgia . . . . .	69	80	72	63	64	58	56
Florida . . . . .	79	79	57	63	70	75	65
Alabama . . . . .	65	84	67	67	59	68	68
Mississippi . . . . .	68	90	63	69	67	76	67
Louisiana . . . . .	74	87	61	77	64	69	69
Texas . . . . .	72	84	69	71	72	72	77
Arkansas . . . . .	67	91	64	72	78	80	66
Tennessee . . . . .	70	94	64	69	74	83	67
Missouri . . . . .	75	93	60	72	80	92	62
Oklahoma . . . . .	74	90	69	77	75	76	64
California . . . . .	93	93	99	83	77	91	91
Arizona . . . . .	87	96	93	80	88	85	92
New Mexico . . . . .	-	-	-	-	-	-	80
United States . . . . .	70.3	85.8	70.0	70.7	69.2	71.2	69.9

**Condition of American Cotton Crops on July 25**

As reported by the United States Department of Agriculture

STATES	1917	1918	1919	1920	1921	1922	1923
Virginia . . . . .	75	75	80	74	82	80	88
North Carolina . . . . .	65	87	76	77	75	78	82
South Carolina . . . . .	74	80	71	77	62	60	64
Georgia . . . . .	69	77	67	68	59	54	48
Florida . . . . .	80	70	50	64	60	65	52
Alabama . . . . .	65	78	64	67	58	70	66
Mississippi . . . . .	73	81	63	71	68	74	65
Louisiana . . . . .	74	65	52	71	59	70	68
Texas . . . . .	68	61	67	74	62	72	71
Arkansas . . . . .	71	77	63	78	76	81	68
Tennessee . . . . .	71	86	67	76	75	85	69
Missouri . . . . .	78	93	67	81	80	90	70
Oklahoma . . . . .	77	75	75	85	68	75	63
California . . . . .	94	95	100	85	83	95	88
Arizona . . . . .	88	95	93	85	89	86	91
New Mexico . . . . .	—	—	—	—	88	85	85
United States . . . . .	70.3	73.6	67.1	74.1	64.7	70.8	67.2

**Condition of American Cotton Crops on August 25**

As reported by the United States Department of Agriculture

STATES	1917	1918	1919	1920	1921	1922	1923
Virginia . . . . .	76	84	67	81	63	68	93
North Carolina . . . . .	69	77	70	79	62	65	71
South Carolina . . . . .	74	67	67	71	50	46	57
Georgia . . . . .	68	66	55	58	41	44	42
Florida . . . . .	65	60	38	57	59	60	30
Alabama . . . . .	65	66	55	58	53	60	52
Mississippi . . . . .	75	67	61	60	57	60	48
Louisiana . . . . .	75	53	47	55	45	60	53
Texas . . . . .	55	43	61	67	42	59	55
Arkansas . . . . .	79	52	65	75	63	63	57
Tennessee . . . . .	80	58	69	75	74	65	64
Missouri . . . . .	83	60	75	83	78	70	67
Oklahoma . . . . .	84	33	71	84	48	53	46
California . . . . .	90	92	98	80	83	91	88
Arizona . . . . .	89	96	90	86	85	87	90
New Mexico . . . . .	—	—	—	—	—	85	88
United States . . . . .	67.8	55.7	61.4	67.5	49.3	57.0	54.1

# Condition of American Cotton Crops on September 25

As reported by the United States Department of Agriculture

STATES	1917	1918	1919	1920	1921	1922	1923
Virginia . . . . .	69	84	64	72	53	63	83
North Carolina . . . . .	63	74	61	68	54	59	64
South Carolina . . . . .	67	65	61	62	40	38	53
Georgia . . . . .	62	62	49	51	33	37	31
Florida . . . . .	61	50	35	50	50	55	20
Alabama . . . . .	55	63	45	49	46	55	42
Mississippi . . . . .	63	64	52	50	48	54	37
Louisiana . . . . .	69	52	38	47	41	53	45
Texas . . . . .	53	44	52	61	38	52	56
Arkansas . . . . .	68	50	60	65	53	57	50
Tennessee . . . . .	65	59	64	66	62	56	47
Missouri . . . . .	76	61	58	75	70	70	64
Oklahoma . . . . .	62	33	72	70	38	42	49
California . . . . .	80	90	95	78	73	80	84
Arizona . . . . .	87	93	92	90	81	80	90
United States . . . . .	60.4	54.4	54.4	59.1	42.2	50.0	49.5

# Condition of American Cotton Crops on Reporting Dates in 1923

From statistics compiled by United States Department of Agriculture

STATES	May 25	June 25	July 25	Aug. 25	Sept. 25	Oct. 25
Virginia . . . . .	79	90	88	93	83	88
North Carolina . . . . .	77	80	82	71	64	70
South Carolina . . . . .	64	64	64	57	53	53
Georgia . . . . .	65	56	48	42	31	31
Florida . . . . .	87	65	52	30	20	22
Alabama . . . . .	70	68	66	52	42	39
Mississippi . . . . .	70	67	65	48	37	36
Louisiana . . . . .	68	69	68	53	45	43
Texas . . . . .	77	77	71	55	56	57
Arkansas . . . . .	66	66	68	57	50	37
Tennessee . . . . .	70	67	69	64	47	35
Missouri . . . . .	54	62	70	67	64	49
Oklahoma . . . . .	63	64	63	46	49	43
California . . . . .	93	91	88	88	84	86
Arizona . . . . .	92	92	91	90	90	88
United States . . . . .	71.0	69.9	67.2	54.1	49.5	47.8

## United States Cotton Production, per Acre, by States

[In pounds]

Compiled by United States Department of Agriculture

STATES	1917	1918	1919	1920	1921	1922	1923 <sup>1</sup>
United States . . . . .	160	160	161.5	178	124.5	141.5	128.8
Alabama . . . . .	125	149	122	111	124	142	91
Arizona . . . . .	285	280	270	224	242	222	311
Arkansas . . . . .	170	158	155	195	161	173	97
California . . . . .	242	270	268	266	258	188	277
Florida . . . . .	100	85	74	86	80	102	40
Georgia . . . . .	173	190	152	138	90	100	82
Louisiana . . . . .	210	167	93	126	114	144	125
Mississippi . . . . .	155	187	160	145	148	157	89
Missouri . . . . .	190	200	257	275	325	360	162
North Carolina . . . . .	194	268	266	275	264	250	290
Oklahoma . . . . .	165	92	195	230	104	103	90
South Carolina . . . . .	208	250	240	260	140	123	187
Tennessee . . . . .	130	175	195	185	228	190	90
Texas . . . . .	135	115	140	174	98	130	145
Virginia . . . . .	180	270	255	230	230	230	325

<sup>1</sup> Data for 1923 are preliminary estimates.

## Average Grades of Recent Cotton Crops

Henry G. Hester, Secretary of the New Orleans Cotton Exchange, computes the average grades of recent American cotton crops to have been as follows:

1916-17, middling to strict middling.

1917-18, middling.

1918-19, barely middling.

1919-20, strict low middling.

1920-21, barely middling.

1921-22, middling.

1922-23, middling.

# United States Production of Cotton and Linters

From statistics compiled by United States Bureau of the Census

GROWTH YEAR	COTTON EXCLUSIVE OF LINTERS		LINTERS		COTTON, INCLUDING LINTERS	
	Running Bales, counting Round as Half Bales	Equivalent 500-Pound Bales Gross Weight	Running Bales	Equivalent 500-Pound Bales Gross Weight	Running Bales, counting Round as Half Bales	Equivalent 500-Pound Bales Gross Weight
1900	10,102,102	10,123,027	143,500	143,500	10,245,602	10,266,527
1901	9,582,520	9,509,745	166,026	166,026	9,748,546	9,675,771
1902	10,588,250	10,630,945	196,223	196,223	10,784,473	10,827,168
1903	9,819,969	9,851,129	195,752	194,486	10,015,721	10,045,615
1904	13,451,337	13,438,012	245,973	241,942	13,697,310	13,679,954
1905	10,495,105	10,575,017	230,497	229,539	10,725,602	10,804,556
1906	12,983,201	13,273,809	322,064	321,689	13,305,265	13,595,498
1907	11,057,822	11,107,179	268,060	268,282	11,325,882	11,375,461
1908	13,086,005	13,241,799	346,126	345,507	13,432,131	13,587,306
1909	10,072,731	10,004,949	313,478	310,433	10,386,209	10,315,382
1910	11,568,334	11,608,616	397,628	397,072	11,965,962	12,005,688
1911	15,553,073	15,692,701	556,276	557,575	16,109,349	16,250,276
1912	13,488,539	13,703,421	602,324	609,594	14,090,863	14,313,015
1913	13,982,811	14,156,486	631,153	638,881	14,613,964	14,795,367
1914	15,905,840	16,134,930	832,401	856,900	16,738,241	16,991,830
1915	11,068,173	11,191,820	944,640	931,141	12,012,813	12,122,961
1916	11,363,915	11,449,930	1,300,163	1,330,714	12,664,078	12,780,644
1917	11,248,242	11,302,375	1,096,422	1,125,719	12,344,664	12,428,094
1918	11,906,480	12,040,532	910,236	929,516	12,816,716	12,970,048
1919	11,325,532	11,420,763	595,093	607,969	11,920,625	12,028,732
1920	13,270,970	13,439,603	429,005	440,313	13,699,975	13,879,916
1921	7,977,778	7,953,641	382,375	397,752	8,360,153	8,351,393
1922	9,729,306	9,762,069	590,537	607,779	10,319,843	10,369,848
1923	10,159,498	10,128,478	—	—	—	—

## Summary of Commercial Crops of American Cotton

[In running bales, including linters]

Compiled by New Orleans Cotton Exchange

	1918-19	1919-20	1920-21	1921-22	1922-23
Port receipts . . . . .	6,735,898	7,299,667	7,088,492	6,402,985	5,935,645
Overland to mills . . . . .	1,528,262	1,674,828	1,465,385	1,647,570	1,267,819
Southern consumption . . . . .	3,533,777	3,691,005	3,096,504	3,942,416	4,487,535
Total movement . . . . .	11,797,937	12,665,500	11,650,381	11,992,971	11,690,999
Less taken by southern mills from ports . . . . .	158,284	222,320	273,065	339,838	408,193
Total crops . . . . .	11,639,653	12,443,180	11,377,316	11,653,133	11,282,806

## American Cotton Production — Two Methods of computing it

The production of cotton in the United States is computed in two different ways: first, by the ginnings plus estimated city crop, rebaled samples, etc.; secondly, by the amount of cotton moved out of the cotton belt during the season both by rail overland and through the ports, plus the amount consumed within the cotton belt, with due allowance for the difference between the stocks held within the belt, including those on plantations, at the end of the season and those at the beginning. The Bureau of the Census compiles its figures by the first method. Henry G. Hester, Secretary of the New Orleans Cotton Exchange, employs the second method.

The following tables will be of interest in showing how the figures of the Bureau of the Census and those of Secretary Hester check up with each other:

### Production of Cotton in the United States in Running Bales Including Linters

GROWTH YEAR	CENSUS BUREAU'S FIGURES			Hester's Figures of Total Crop
	Ginnings	Additions for City Crop, etc.	Total Crop	
1914 . . . . .	16,738,000	264,000	17,002,000	17,004,000
1915 . . . . .	12,013,000	214,000	12,227,000	12,175,000
1916 . . . . .	12,664,000	250,000	12,914,000	12,966,000
1917 . . . . .	12,345,000	341,000	12,686,000	12,424,000
1918 . . . . .	12,817,000	194,000	13,011,000	13,070,000
1919 . . . . .	11,921,000	259,000	12,180,000	12,000,000
1920 . . . . .	13,700,000	187,000	13,887,000	13,750,000
1921 . . . . .	8,360,000	132,000	8,492,000	8,442,000
1922 . . . . .	10,320,000	648,000	10,968,000	10,424,000

### Exclusive of Linters

GROWTH YEAR	CENSUS BUREAU'S FIGURES			Hester's Figures of Total Crop
	Ginnings	Additions for City Crop, etc.	Total Crop	
1914 . . . . .	15,906,000	256,000	16,162,000	16,163,000
1915 . . . . .	11,068,000	103,000	11,171,000	11,118,000
1916 . . . . .	11,364,000	54,000	11,418,000	11,470,000
1917 . . . . .	11,248,000	144,000	11,392,000	11,131,000
1918 . . . . .	11,906,000	141,000	12,047,000	12,107,000
1919 . . . . .	11,326,000	258,000	11,584,000	11,404,000
1920 . . . . .	13,271,000	187,000	13,458,000	13,321,000
1921 . . . . .	7,978,000	131,000	8,109,000	8,053,000
1922 . . . . .	9,729,000	608,000	10,337,000	9,837,000



# United States Commercial Crops of Cotton

Compiled by the New Orleans Cotton Exchange

STATE	1918-19	1919-20	1920-21	1921-22	1922-23
Alabama . . . . .	756,000	891,000	607,000	733,000	981,000
Arkansas . . . . .	914,000	899,000	1,113,000	995,000	1,118,000
Florida . . . . .	34,000	20,000	18,000	13,000	30,000
Georgia . . . . .	2,029,000	2,037,000	850,000	1,629,000	1,035,000
Louisiana . . . . .	541,000	329,000	362,000	337,000	368,000
Oklahoma . . . . .	590,000	825,000	1,190,000	709,000	664,000
Mississippi . . . . .	1,154,000	1,046,000	856,000	1,033,000	1,108,000
North Carolina, etc. <sup>1</sup>	908,000	1,006,000	839,000	1,053,000	1,068,000
South Carolina . . . . .	1,491,000	1,743,000	1,046,000	1,546,000	799,000
Tennessee, etc. <sup>2</sup>	543,000	550,000	514,000	565,000	675,000
Texas . . . . .	2,680,000	3,097,000	3,982,000	3,040,000	3,437,000
Total crop . . . . .	11,640,000	12,443,000	11,377,000	11,653,000	11,283,000

<sup>1</sup> Including Virginia and Kentucky.

<sup>2</sup> Including Missouri, California, Arizona, etc.

## United States Production of Cotton, Exclusive of Linters, by States

[Running bales, counting round as half bales]

From statistics compiled by United States Bureau of the Census

STATE	1918	1919	1920	1921	1922	1923 <sup>1</sup>
Alabama . . . . .	789,265	716,655	670,330	587,669	819,870	598,924
Arizona . . . . .	54,215	58,472	105,191	42,926	44,132	77,686
Arkansas . . . . .	957,118	867,177	1,182,010	788,047	1,010,520	642,368
California . . . . .	71,479	59,082	77,892	34,809	28,473	55,285
Florida . . . . .	34,951	17,317	19,443	12,202	27,428	13,628
Georgia . . . . .	2,117,860	1,678,758	1,447,159	822,621	735,874	612,531
Louisiana . . . . .	582,698	303,035	389,569	284,330	345,407	373,574
Mississippi . . . . .	1,193,122	950,907	900,371	816,961	985,787	621,836
Missouri . . . . .	59,797	62,667	76,328	68,145	139,881	124,212
North Carolina . . . . .	919,338	857,253	949,484	803,620	879,294	1,050,474
Oklahoma . . . . .	585,149	1,002,178	1,302,610	477,777	637,003	665,736
South Carolina . . . . .	1,581,726	1,462,277	1,652,177	786,039	517,464	793,025
Tennessee . . . . .	317,962	301,408	314,811	297,555	385,860	233,980
Texas . . . . .	2,610,337	2,960,335	4,148,399	2,129,660	3,125,758	4,209,941
Virginia . . . . .	25,235	23,076	21,898	16,680	27,011	51,646
All other states . . . . .	6,228	4,935	13,298	8,737	19,544	34,652
Total . . . . .	11,906,480	11,325,532	13,270,970	7,977,778	9,729,306	10,159,498

<sup>1</sup> March, 1924, preliminary report.

### United States Production of Extra Staple Cotton

It is impossible to compile statistics as to extra staple cotton production which would be accepted without question by all sections of the trade, due principally to the fact that there is a large quantity of cotton produced which some cotton experts would call  $1\frac{1}{8}$ " and therefore extra staple, while others would call it only  $1\frac{1}{16}$ " and therefore short staple. Estimates of the extra staple crop, exclusive of Sea Islands and American-Egyptians, range all the way from 600,000 to 1,300,000 bales in normal years. The estimates of the United States Department of Agriculture for the five years from 1916 to 1920, inclusive, are given below. It is evident from the large totals that these estimates are based on a relatively low standard of staple classification. It should be noted that these statistics are exclusive of Sea Island and American-Egyptian cotton.

STATES	1916	1917	1918	1919	1920
	$1\frac{1}{8}$ TO $1\frac{1}{4}$ INCH, INCLUSIVE				
Arkansas . . .	178,000	209,000	201,000	136,000	225,000
California . . .	13,000	13,000	9,000	10,000	3,000
Louisiana . . .	27,000	23,000	22,000	7,000	10,000
Mississippi . . .	284,000	404,000	470,000	300,000	252,000
Oklahoma . . .	90,000	155,000	55,000	77,000	192,000
South Carolina . .	73,000	106,000	122,000	93,000	144,000
Texas . . .	186,000	222,000	189,000	177,000	230,000
All other States <sup>1</sup> . .	95,000	81,000	114,000	51,000	56,000
Total . . .	946,000	1,213,000	1,182,000	851,000	1,112,000
	OVER $1\frac{1}{4}$ INCH				
Arkansas . . .	15,000	25,000	26,000	30,000	37,000
Louisiana . . .	4,000	3,000	2,000	1,000	2,000
Mississippi . . .	24,000	45,000	66,000	42,000	29,000
Oklahoma . . .	—	8,000	6,000	2,000	4,000
South Carolina . .	11,000	36,000	41,000	21,000	29,000
Texas . . .	—	15,000	5,000	6,000	5,000
All other States <sup>2</sup> . .	8,000	9,000	31,000	4,000	5,000
Total . . .	62,000	141,000	177,000	106,000	111,000

<sup>1</sup> Includes Alabama, Arizona, Florida, Georgia, Missouri, North Carolina and Tennessee.

<sup>2</sup> Includes California, Georgia, Missouri, North Carolina and Tennessee.

# United States Production of Sea Island Cotton

[Running bales]

Compiled by United States Bureau of the Census

YEAR	Florida	Georgia	South Carolina	Total	Average Gross Weight of Bale (Pounds)
1912 . . . . .	22,334	43,736	7,707	73,777	381.9
1913 . . . . .	25,587	43,305	8,671	77,563	384.7
1914 . . . . .	33,662	42,395	5,597	81,654	395.5
1915 . . . . .	28,094	57,572	6,178	91,844	387.5
1916 . . . . .	36,092	77,981	3,486	117,559	395.6
1917 . . . . .	37,327	47,979	7,313	92,619	388.6
1918 . . . . .	20,571	21,279	10,358	52,208	391.7
1919 . . . . .	2,787	684	3,445	6,916	362.1
1920 . . . . .	1,236	383	249	1,868	384.1
1921 . . . . .	2,573	611	143	3,327	374.1
1922 . . . . .	4,886	158	81	5,125	371.7
1923 . . . . .	—	—	—	785	386.1

# World Production of Long Staple Cottons, 1910 to 1923

[In equivalent 500-pound gross bales]

YEAR	American Extra Staple Uplands 1½ Ineh and Over	Egyptians	Sea Islands	American Egyptians	Others	Total
1910 . . . . .	No statistics available	1,506,000	71,080	—	No statistics available	No statistics available
1911 . . . . .		1,463,000	95,380	—		
1912 . . . . .		1,492,000	56,360	375		
1913 . . . . .		1,522,000	59,680	2,135		
1914 . . . . .		1,286,000	64,580	6,187		
1915 . . . . .	832,000	952,000	71,180	1,095	143,725	2,000,000
1916 . . . . .	1,009,000	1,012,000	93,000	3,331	132,669	2,250,000
1917 . . . . .	1,354,000	1,249,000	71,980	15,966	159,054	2,850,000
1918 . . . . .	1,359,000	955,000	40,900	40,343	104,757	2,500,000
1919 . . . . .	957,000	1,248,000	5,020	42,374	97,606	2,350,000
1920 . . . . .	1,225,000	1,231,000	1,440	90,745	50,560	2,600,000
1921 . . . . .	800,000	862,000	2,480	39,359	50,000	1,750,000
1922 . . . . .	1,200,000	1,119,000	3,810	35,463	150,000	2,500,000
1923 <sup>1</sup> . . . . .	1,000,000	1,160,000	600	23,946	200,000	2,380,000

<sup>1</sup> 1923 statistics are preliminary estimates.

# Active and Idle Ginneries in the United States and Average Number of Running Bales ginned per Active Establishment

Compiled by United States Bureau of the Census

GROWTH YEAR	Total Ginneries	Active Ginneries	Idle Ginneries	Bales ginned per Establishment
1905 . . . . .	31,441	29,038	2,403	366
1910 . . . . .	29,380	26,234	3,146	443
1915 . . . . .	26,721	23,162	3,559	478
1916 . . . . .	25,999	21,624	4,375	526
1917 . . . . .	24,272	20,351	3,921	553
1918 . . . . .	23,439	19,259	4,180	618
1919 . . . . .	22,418	18,815	3,603	602
1920 . . . . .	21,876	18,440	3,436	720
1921 . . . . .	20,938	16,192	4,746	493
1922 . . . . .	19,939	15,420	4,519	631

# Estimated Values of Cotton and Cotton Seed produced

From statistics compiled by United States Bureau of the Census

GROWTH YEAR	Value of Cotton produced	Value of Cotton Seed produced	Total Value of Cotton Crop
1911 . . . . .	\$749,890,000	\$119,800,000	\$869,690,000
1912 . . . . .	786,800,000	117,330,000	904,130,000
1913 . . . . .	885,350,000	141,350,000	1,026,700,000
1914 . . . . .	591,130,000	128,950,000	720,080,000
1915 . . . . .	627,940,000	167,900,000	795,840,000
1916 . . . . .	994,060,000	259,070,000	1,253,130,000
1917 . . . . .	1,532,690,000	333,550,000	1,866,240,000
1918 . . . . .	1,737,710,000	349,490,000	2,087,200,000
1919 . . . . .	2,030,960,000	340,470,000	2,371,430,000
1920 . . . . .	1,067,240,000	136,990,000	1,204,230,000
1921 . . . . .	675,630,000	104,560,000	780,190,000
1922 . . . . .	1,117,060,000	150,400,000	1,267,460,000

# Yearly Average Prices of Cotton and Cotton Seed paid to Producers in the United States

From statistics compiled by the United States Bureau of the Census

CROP YEAR	Yearly Average Price of Lint Cotton per Pound (in Cents)	Yearly Average Price of Cotton Seed per Ton
1910 . . . . .	13.95	\$25.80
1911 . . . . .	9.56	17.10
1912 . . . . .	11.48	19.20
1913 . . . . .	12.48	22.40
1914 . . . . .	7.33	17.90
1915 . . . . .	11.22	33.60
1916 . . . . .	17.28	50.50
1917 . . . . .	27.12	66.08
1918 . . . . .	28.76	65.32
1919 . . . . .	35.36	67.18
1920 . . . . .	15.89	22.92
1921 . . . . .	16.90	29.72
1922 . . . . .	22.85	34.70

# Cotton ginned to Specified Dates and throughout the Season

[Running bales, except that round bales are counted as half bales. Linters are not included]

Compiled by United States Bureau of the Census

COTTON GINNED TO —	YEAR OF GROWTH					
	1918	1919	1920	1921	1922	1923
September 1	1,038,078	142,625	351,589	485,787	806,189	1,135,800
September 25	3,770,611	1,835,214	2,249,606	2,920,392	3,866,396	3,235,974
October 18	6,811,351	4,929,104	5,754,582	5,497,364	6,978,321	6,415,145
November 1	7,777,159	6,305,054	7,508,633	6,646,354	8,139,215	7,565,866
November 14	8,706,420	7,604,320	8,914,642	7,274,201	8,869,978	8,374,148
December 1	9,571,414	8,844,368	10,141,293	7,639,961	9,319,601	9,251,264
December 13	10,281,139	9,396,646	10,876,263	7,790,656	9,488,852	9,554,177
January 1	10,773,863	10,008,920	11,554,648	7,882,356	9,597,330	9,811,038
January 16	11,048,652	10,307,120	12,014,742	7,912,452	9,648,261	9,946,462
Total gin- nings	11,906,480	11,325,532	13,270,970	7,977,778	9,729,306	10,159,498 <sup>1</sup>

<sup>1</sup> March, 1924, preliminary report.

# Per Cent of Total Cotton ginned to Specified Dates

Compiled by United States Bureau of the Census

PER CENT GINNED TO —	YEAR OF GROWTH					
	1918	1919	1920	1921	1922	1923
September 1	8.7	1.3	2.6	6.1	8.3	11.2
September 25	31.7	16.2	17.0	36.6	39.7	31.8
October 18	57.2	43.5	43.4	68.9	71.7	63.1
November 1	65.3	55.7	56.6	83.3	83.7	74.4
November 14	73.1	67.1	67.2	91.2	91.2	82.5
December 1	80.4	78.1	76.4	95.8	95.8	91.0
December 13	86.3	83.0	82.0	97.7	97.5	94.1
January 1	90.5	88.4	87.1	98.8	98.6	96.5
January 16	92.8	91.0	90.5	99.2	99.2	97.9

# **Estimated Quantity of Cotton Seed produced, Quantity of Cotton Seed crushed, and Quantities and Values of Crude Products obtained**

Statistics of the quantity of seed produced relate to the preceding crop year. Those of the quantity crushed and of the quantities and values of products obtained relate to the year ending July 31.

From statistics compiled by United States Bureau of the Census

Year	Cotton Seed produced (Tons)	Cotton Seed crushed (Tons)	Total Value of Products	Quantity of Oil (Gallons)	Value of Oil	Quantity of Cake and Meal (Tons)	Value of Cake and Meal	Quantity of Hulls (Tons)	Value of Hulls	Quantity of Linters (500-Pound Bales)	Value of Linters
1912	6,997,000	4,921,073	\$131,340,000	201,650,000	\$66,580,000	2,151,000	\$49,720,000	1,642,000	\$9,890,000	533,099	\$5,150,000
1913	6,104,000	4,579,508	132,230,000	185,750,000	69,100,000	1,999,000	45,970,000	1,540,000	9,710,000	583,091	7,450,000
1914	6,305,000	4,847,628	159,676,000	193,330,000	81,020,000	2,220,000	59,810,000	1,400,000	11,210,000	660,087	7,630,000
1915	7,186,000	5,779,665	152,880,000	229,260,000	80,540,000	2,648,000	57,740,000	1,677,000	8,450,000	820,274	6,150,000
1916	4,992,000	4,202,313	180,260,000	167,110,000	87,940,000	1,923,000	53,860,000	1,220,000	12,340,000	889,577	26,120,000
1917	5,113,000	4,479,176	287,192,000	187,688,000	153,419,000	2,225,000	74,586,000	969,000	13,994,000	1,273,345	45,193,000
1918	5,040,000	4,251,680	360,736,000	174,996,000	217,902,000	2,068,000	97,352,000	996,000	18,878,000	1,080,802	26,604,000
1919	5,360,000	4,478,508	383,580,000	176,711,000	227,316,000	2,170,000	116,119,000	1,137,000	17,917,000	889,500	22,228,000
1920	5,074,000	4,012,704	352,138,000	161,529,000	209,668,000	1,817,000	119,039,000	1,143,000	11,095,000	584,146	12,336,000
1921	5,971,000	4,069,166	156,513,000	174,558,000	84,650,000	1,786,000	58,298,000	1,256,000	10,059,000	422,226	3,506,000
1922	3,531,000	3,007,717	136,974,000	124,063,000	71,508,000	1,355,000	49,898,000	937,000	8,949,000	383,547	6,619,000
1923	4,336,000	3,241,557	150,400,000	133,723,000	84,818,000	1,487,000	59,037,000	944,000	12,200,000	584,177	17,199,000

### **Review of Last Five American Cotton Crops, 1919 to 1923**

**1919.** The acreage planted in 1919 was about the average for the few years immediately preceding, the area under cultivation at the end of June being 35,133,000 acres. Weather conditions during the spring were decidedly unfavorable. Frequent rains in March delayed preparation of the soil and planting, cool weather in April retarded germination and growth, frost late in April damaged the plant in the Carolinas, while frequent rains and persistently cool weather during May continued to affect the cotton adversely in most sections of the belt. The eastern section suffered the least, and there the condition of the crop at the end of May was fairly good, but in most of the western portions of the belt the crop was in very poor condition. Similar conditions continued through June, more particularly in the western and southern portions of the belt. In July the weather was more favorable in the West, the rainfall being much less than earlier in the season, but in the East there was too much rain, resulting in rank growth of stalk. Weather conditions caused much damage by insect pests. During August the weather was fairly favorable in most sections and the crop made moderate progress, but at the end of the month the situation was unsatisfactory over large sections of the belt. There was a great variety of weather in different sections during September, resulting in good progress in some states and deterioration elsewhere. October was decidedly unfavorable, persistent rains resulting in bolls decaying, seed sprouting, and discoloration of open cotton. The rains continued well into November. Extensive killing frost occurred in the Gulf States about the middle of November. Boll weevil injury during 1919 was decidedly variable in its intensity, but in the country as a whole was comparatively light. The acreage harvested was 33,566,000. The average yield per acre was low, being only 161.5 pounds. The crop was the fifth short one in succession, totalling only 11,325,532 running bales, counting round as half bales, exclusive of linters. Linters totalled 595,093 bales, making the total crop, including linters, 11,920,625 bales.

**1920.** A large area was planted to cotton in 1920, there being 37,043,000 acres under cultivation at the end of June. In only three years, 1913, 1914 and 1918, had this acreage been exceeded. The record acreage of 1913 was not very much larger than this, being 37,458,000. The 1920 crop got a poor start. Low temperatures and excessive rains delayed planting in some parts of the belt, and in other sections damaged the plants to such an extent that replanting was necessary. The crop was in poor condition at the end of May in all sections of the belt, es-

pecially in Texas and the Southeast. Much better weather prevailed in June, with resulting steady, and, in some parts of the belt, rather pronounced improvement. Weather conditions were normal during the first two decades of July, but less so in the last decade, due to frequent rains and lack of sunshine in Florida, Alabama, parts of Mississippi and in Louisiana. These conditions caused shedding and weevil activity. During August the crop made satisfactory advance in the more western and northwestern portions of the belt, but in the Southern States excessive rainfall interfered with its progress. At the end of the month the crop was in poor condition over a large part of the South, particularly Louisiana, Mississippi, Alabama, Georgia and Florida. The weather in September generally favored rapid opening of the bolls and quick harvesting. In October continued mild weather brought to maturity the late plants in the Northeastern States. The acreage harvested was 35,878,000. The average yield per acre was fairly good, being 178.4. The crop was the first of even average size since 1914. It totalled 13,270,970 running bales, counting round as half bales, exclusive of linters. The linters totalled 429,005 bales, making the total crop, including linters, 13,699,975 bales.

**1921.** The 1921 cotton crop was notable, not only on account of its smallness, but also because of the unusual degree to which the government and the trade misjudged its size until after picking was practically completed. As a result of the great decline in the price of the staple during the preceding season, a determined campaign was conducted throughout the belt to reduce the acreage, and the general impression through most of the growing season was that the area planted had actually been cut by fully 25 per cent as compared with 1920. This was confirmed by the Department of Agriculture, which reported in June that the acreage was 28.4 per cent less than the year previous and aggregated only 26,519,000 acres. At the very beginning of the season, weather conditions were generally favorable, but later, during April, excessive rains and low temperatures did much damage and forced a great deal of replanting. May was more propitious, and in June the crop continued to make some progress, but on the whole the crop was in a very unsatisfactory condition at the end of June. Usually a low condition in one section of the belt is offset by fair to good conditions elsewhere, but in 1921 the condition at the close of June was low in almost all sections. In July the crop continued to lose ground slowly, and in August it deteriorated rapidly, largely due to an extensive drought in Texas, Oklahoma and Louisiana, excessive rains in some parts of the belt east of the Mississippi, and extraordinary ravages by the boll



weevil. The result of all these adverse factors was that the government announced in September that the condition as of August 25 warranted a forecast of only 7,037,000 bales, and in October, taking the condition of September 25 as a basis, it predicted a crop of only 6,537,000 bales. These estimates, however, proved to be unduly low, not so much because of underestimating the yield per acre as because, as it was afterward shown, the acreage itself had been greatly understated. In December the Department announced that it was obliged, by information that it had received during the latter part of the season, to raise its estimate of the acreage from 26,519,000 to 31,678,000 acres. Only 30,509,000 acres were harvested, yielding 124.5 per acre. The crop totalled only 7,977,778 running bales exclusive of linters, and was the smallest in size since 1895. Linters aggregated 382,375 bales, making the total crop, including linters, 8,360,153.

**1922.** The boll weevil held the centre of the stage during 1922. It was hoped that after the small 1921 crop, 1922 would bring a pre-war normal, or at least one around 12,000,000 bales, but on June 25 the government forecast of 11,065,000 bales and 34,016,000 acres, and a month later of 11,449,000 bales dampened this somewhat. The season, however, was late, and heavy rains and low temperatures kept the crop back. Replanting was necessary in many instances and caused the weevil to be even more formidable as the advantage to be gained by an early start was lost. Drought in the Western States which mitigated against the pest also affected the crop seriously, so that hopes for a fair yield per acre were soon dissipated. The critical months of July and August brought an unusual condition. Would the poorly rooted crop resulting from a wet spring be damaged by hot weather unfavorable to the weevil? The answer was a split between hot weather damage in the Southwest and the boll weevil in the East. As a result the crop estimate fell to 10,575,000 bales on August 25 and to 10,135,000 on September 25. Picking and ginning were rapid, and growers were disposed to sell just as rapidly, so the crop came on the market speedily. The December forecast of 9,964,000 caused further disappointment. Actual production amounted to 9,762,069 bales from 33,036,000 acres, or a yield of 141.5 pounds per acre.

**1923.** The tremendous acreage of 38,287,000 was under cultivation on June 25, as it was expected the world would readily consume a large crop after the small production of the two previous years. Unfortunately weather conditions were not propitious. A season which promised to be early turned out late. Much rain fell in the East during August, and the temperature was below normal. In the West, espe-

cially Texas and Oklahoma, a severe drought extended through July and August. The government forecast fell from 11,412,000 bales on June 25 to 10,081,000 in December. The March report of cotton ginned was 10,128,478 bales of 500 pounds each, and indicates a yield of 128.8 pounds per acre, based on 37,420,000 acres harvested. It seems weather conditions and not the boll weevil should be emphasized in discussing the 1923 crop. The weevil can be controlled, but the weather cannot. The weather, furthermore, is the supreme factor in raising cotton, and it must be acknowledged that in recent years excessive rain and drought have been to a great extent determining causes of small production.

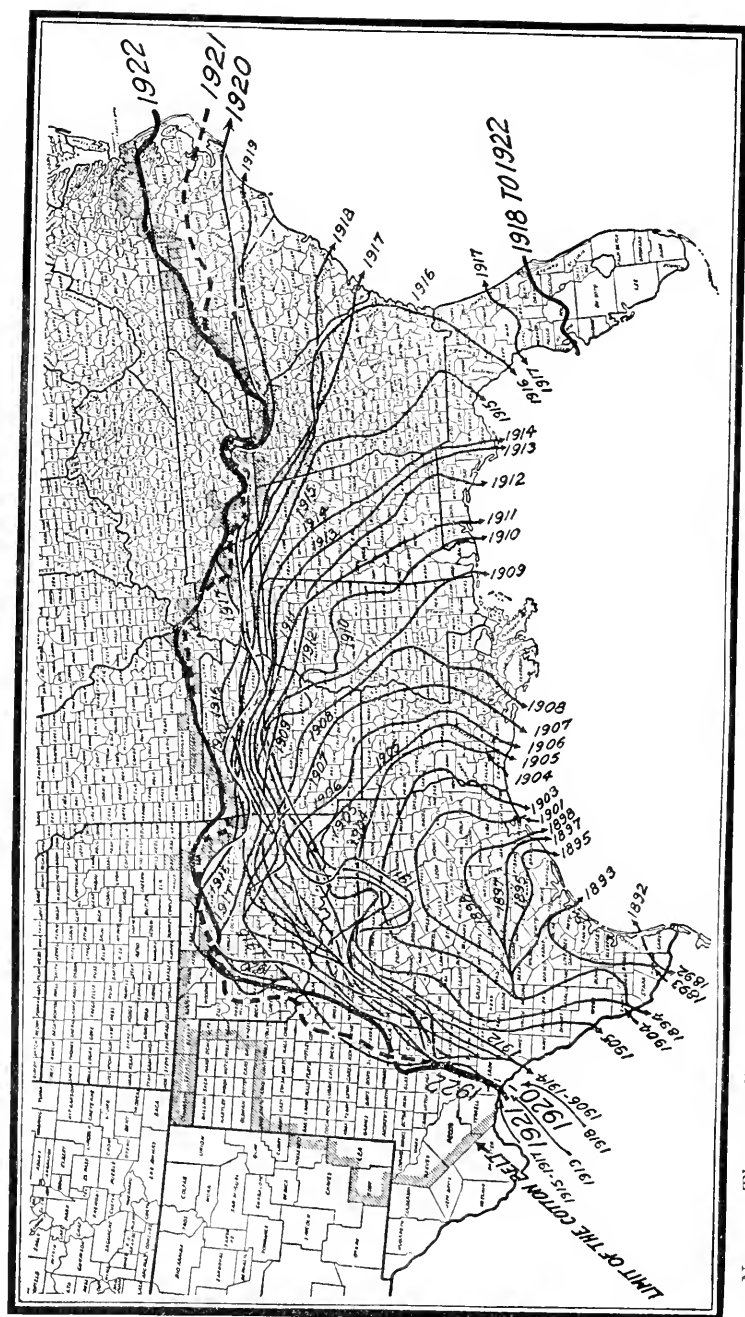
## Application of Calcium Arsenate to Cotton Plants to combat the Boll Weevil, 1923

United States Department of Agriculture

STATE	Cotton Average	USE MADE OF DIFFERENT TREATMENTS										
		ACRES TREATED		(a) DUSTING		(b) SPRAYING		(c) MIXTURES WITH MOLASSES, ETC.		TOTAL OF SPRAYING AND MIXTURES (b+c)		
		Per Cent	Total	Per Cent	Total	Per Cent	Total	Per Cent	Total			
Virginia	1,000 Acres	0.0	1,000 Acres	35.0	48	15.0	20	50.0	68	1,000 Acres	65.0	88
North Carolina	83	8.0	136	20.0	156	11.0	86	69.0	537	80.0	623	
South Carolina	1,701	38.0	779	40.0	566	15.0	212	45.0	636	60.0	848	
Georgia	3,927	36.0	1,414	40.0	566	15.0	212	45.0	636	60.0	848	
Florida	171	15.0	26	65.0	17	8.0	2	27.0	7	35.0	9	
Alabama	3,312	7.0	232	71.0	165	8.0	18	21.0	49	29.0	67	
Mississippi	3,353	5.0	168	68.0	111	8.0	14	21.0	40	32.0	54	
Louisiana	1,316	8.0	105	70.0	74	7.0	7	23.0	24	30.0	31	
Texas	14,077	2.5	352	66.0	232	10.0	35	21.0	85	31.0	120	
Arkansas	3,025	14.0	424	81.0	344	9.0	38	10.0	42	19.0	80	
Tennessee	1,193	10.0	119	87.0	104	11.0	13	2.0	2	13.0	15	
Missouri	391	0	0									
Oklahoma	3,357	.5	17	35.0	6	20.0	3	45.0	8	65.0	14	
California	78	0	0									
Arizona	133	0	0									
All other	115	0	0									
United States	38,287	9.9	3,772	48.4	1,826	11.9	448	39.7	1,498	51.6	1,946	

<sup>1</sup> Per cent of the total cotton acreage.<sup>2</sup> Per cent of the treated acreage.

## Dispersion of the Cotton Boll Weevil in the United States from 1892 to 1922



NOTE.—The outer limit of the Cotton Belt advances or recedes slightly from year to year, and in the map is not absolutely accurate for 1922, as shown by the fact that in a few places the boll-weevil line is a little in advance of the indicated limit of cotton culture. Dispersion in 1923 did not change materially from 1922.

# Percentage of Loss of Cotton due to Boll Weevil, 1909-21

[Expressed in percentage of a normal or full yield per acre]

STATE	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
North Carolina	-	-	-	-	-	-	-	.02	.01	.07	3.00	13.26	3.58
South Carolina	-	-	-	-	-	-	.28	3.11	9.06	10.73	19.36	30.56	31.48
Georgia	-	-	-	.30	11.80	-	13.14	20.98	27.07	23.85	40.16	32.10	45.12
Florida	-	-	-	-	.10	.08	.04	1.23	1.74	.37	.17	.57	27.62
Tennessee	-	-	-	-	-	-	-	-	-	-	-	-	7.21
Alabama	.10	.05	.20	1.50	4.80	6.02	16.16	27.91	28.88	12.11	28.77	36.03	32.39
Mississippi	4.20	14.66	5.10	18.00	33.90	24.14	24.68	31.73	22.22	10.41	19.56	32.25	30.38
Louisiana	41.70	40.80	11.40	13.70	25.10	17.66	19.85	24.31	11.89	9.79	24.84	25.99	34.80
Texas	12.10	6.52	.90	2.80	6.80	7.86	16.28	18.53	7.26	4.43	13.96	19.90	33.66
Oklahoma	3.00	1.27	.20	.50	.40	.79	2.70	3.70	4.35	1.30	1.48	8.81	41.36
Arkansas	6.10	7.23	2.00	2.40	2.80	2.93	4.60	7.49	8.96	3.14	4.79	9.41	21.81
United States average <sup>1</sup>	6.13	5.30	1.28	3.26	6.69	5.91	9.93	13.36	9.34	5.83	13.20	19.95	30.98

<sup>1</sup> Average is weighted and includes cotton States in which there was no damage by boll weevil.

## Indian Cotton Production

These statistics embrace all cotton produced in India, including that used in house manufacture as well as that taken by factories or exported.

[In bales of 400 pounds each]

From statistics compiled by Indian Department of Statistics

PROVINCES AND STATES	1920-21	1921-22	1922-23	1923-24 <sup>1</sup>
Bombay <sup>2</sup> . . . . .	927,000	1,085,000	1,132,000	909,000
Central Provinces and Berar . . . . .	514,000	1,127,000	1,200,000	1,000,000
Madras <sup>2</sup> . . . . .	358,000	336,000	443,000	369,000
Punjab <sup>2</sup> . . . . .	588,000	296,000	409,000	622,000
United Provinces <sup>2</sup> . . . . .	337,000	244,000	178,000	215,000
Sind <sup>2</sup> . . . . .	42,000	52,000	103,000	133,000
Burma . . . . .	42,000	40,000	45,000	55,000
Bengal <sup>2</sup> . . . . .	21,000	15,000	17,000	23,000
Bihar and Orissa . . . . .	15,000	15,000	15,000	16,000
North-West Frontier . . . . .	5,000	3,000	3,000	4,000
Assam . . . . .	14,000	12,000	13,000	14,000
Delhi . . . . .	—	300	1,000	1,000
Ajmer-Merwara . . . . .	15,000	12,000	15,000	13,000
Hyderabad . . . . .	341,000	870,000	1,190,000	1,189,000
Central India . . . . .	162,000	204,000	216,000	180,000
Baroda . . . . .	127,000	85,000	116,000	76,000
Rajputana . . . . .	81,000	68,000	76,000	79,000
Mysore . . . . .	11,000	15,000	24,000	15,000
Total . . . . .	3,600,000	4,479,000	5,196,000 <sup>3</sup>	4,913,000

<sup>1</sup> December, 1923, estimate. <sup>2</sup> Includes Indian States. <sup>3</sup> Revised February, 1923, to 5,181,000.

# Indian Cotton Yield per Acre

[In pounds]

From statistics compiled by Indian Department of Statistics

PROVINCES AND STATES	1919-20	1920-21	1921-22	1922-23	1923-24 <sup>1</sup>
Bombay <sup>2</sup> . . . . .	103	66	96	90	68
Central Provinces and Berar . . . . .	112	46	102	102	82
Madras <sup>2</sup> . . . . .	70	64	79	75	68
Punjab <sup>2</sup> . . . . .	120	110	93	115	132
United Provinces <sup>2</sup> . . . . .	138	116	119	108	130
Sind <sup>2</sup> . . . . .	105	60	145	172	169
Burma . . . . .	83	67	52	66	73
Bengal <sup>2</sup> . . . . .	145	120	91	94	130
Bihar and Orissa . . . . .	92	79	75	75	80
North-West Frontier . . . . .	86	74	80	80	70
Assam . . . . .	158	141	113	130	144
Delhi . . . . .	—	—	80	152	133
Ajmer-Merwara . . . . .	218	143	185	167	127
Hyderabad . . . . .	97	62	119	117	128
Central India . . . . .	55	49	70	97	77
Baroda . . . . .	64	64	57	80	47
Rajputana . . . . .	107	87	92	101	96
Mysore . . . . .	50	40	102	116	72
Average . . . . .	99	68	97	98	90

<sup>1</sup> December, 1923, estimate.

<sup>2</sup> Includes Indian States.

## Indian Cotton Acreage

From statistics compiled by Indian Department of Statistics

PROVINCES AND STATES	1920-21	1921-22	1922-23	1923-24 <sup>1</sup>
Bombay <sup>2</sup>	5,688,000	4,532,000	5,023,000	5,337,000
Central Provinces and Berar	4,477,000	4,414,000	4,703,000	4,895,000
Madras <sup>2</sup>	2,150,000	1,803,000	2,400,000	2,180,000
Punjab <sup>2</sup>	2,142,000	1,239,000	1,417,000	1,880,000
United Provinces <sup>2</sup>	1,161,000	828,000	659,000	660,000
Sind <sup>2</sup>	275,000	144,000	239,000	315,000
Burma	366,000	325,000	272,000	303,000
Bengal <sup>2</sup>	71,000	65,000	72,000	71,000
Bihar and Orissa	78,000	79,000	80,000	80,000
North-West Frontier	27,000	15,000	15,000	23,000
Assam	39,000	40,000	40,000	39,000
Delhi	—	2,000	2,000	3,000
Ajmer-Merwara	42,000	26,000	36,000	41,000
Hyderabad	2,214,000	2,914,000	4,336,000	4,018,000
Central India	1,332,000	1,069,000	890,000	938,000
Baroda	792,000	600,000	585,000	649,000
Rajputana	375,000	297,000	302,000	330,000
Mysore	111,000	59,000	83,000	83,000
Total	21,340,000	18,451,000	21,154,000 <sup>3</sup>	21,845,000

<sup>1</sup> December, 1923, estimate.    <sup>2</sup> Includes Indian States.    <sup>3</sup> Revised February, 1923, to 21,077,000.



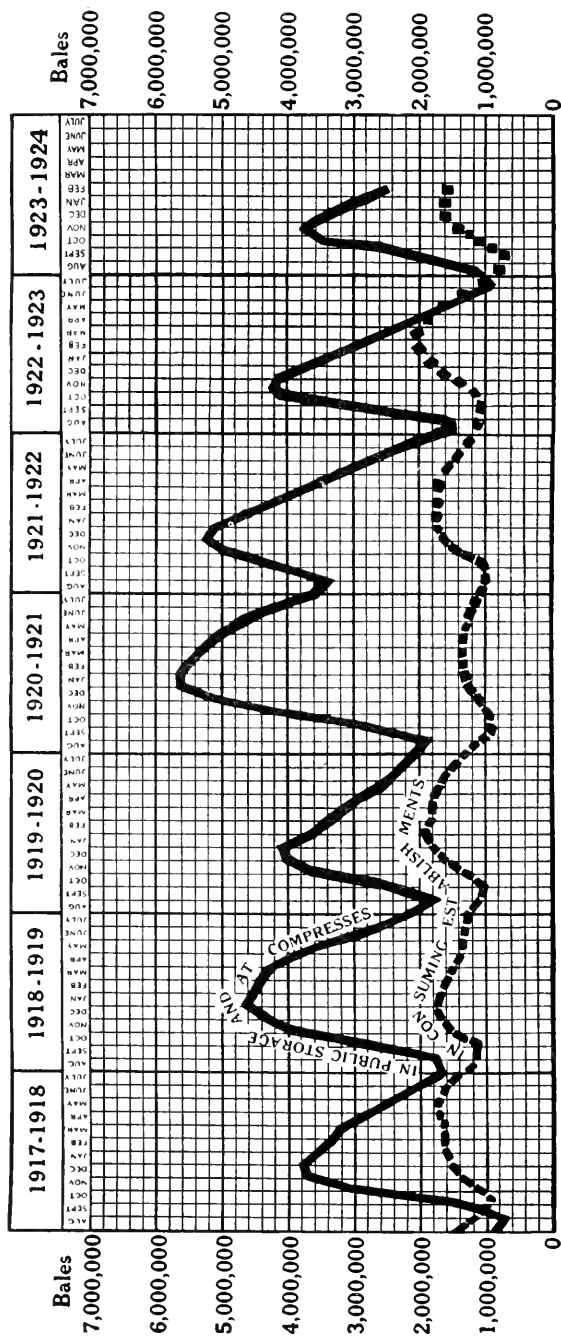
## United States Stocks of Cotton and Linters

[American cotton in running bales, counting round as half bales; foreign cotton in equivalent 500-pound bales]

From statistics compiled by United States Bureau of the Census

AT END OF—	TOTAL COTTON EXCLUSIVE OF LINTERS			LINTERS		SEA ISLAND		EGYPTIAN	
	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage	
December, 1923	1,623,453	3,526,164	112,949	64,232	3,877	3,183	45,354	26,865	
November, 1923	1,438,813	3,770,542	95,851	43,669	4,034	3,333	48,791	26,216	
October, 1923	1,102,583	3,485,839	87,515	35,810	3,623	3,583	53,647	34,259	
September, 1923	773,173	2,147,830	92,819	22,197	3,082	4,261	66,228	37,019	
August, 1923	806,671	1,179,204	106,036	21,832	2,932	6,277	75,775	44,293	
July, 1923	1,003,618	938,903	127,139	36,000	2,917	3,969	86,508	51,316	
June, 1923	1,347,468	1,447,296	144,726	42,221	3,021	4,111	93,687	68,766	
May, 1923	1,631,167	1,580,219	161,157	48,507	3,130	4,152	98,885	71,682	
April, 1923	1,878,198	1,965,714	179,941	53,807	3,070	4,379	105,973	74,140	
March, 1923	2,033,837	2,379,697	172,600	49,258	3,007	4,689	92,619	80,123	
February, 1923	2,020,900	2,803,301	157,533	45,052	3,002	4,907	76,389	66,655	
January, 1923	1,988,115	3,485,952	115,477	45,935	3,198	5,100	63,089	56,888	
December, 1922	1,917,231	4,069,470	123,215	38,445	3,059	5,145	58,736	40,172	
November, 1922	1,724,488	4,197,955	96,214	22,068	2,980	5,243	60,129	35,679	
October, 1922	1,381,945	4,287,119	82,403	16,798	2,194	4,547	53,087	36,263	
September, 1922	1,065,816	3,217,939	97,786	21,592	2,950	4,043	51,757	38,740	
August, 1922	1,024,874	1,530,141	117,558	30,098	4,102	3,417	56,080	42,254	
Season ending—									
July, 1922	1,218,388	1,488,165	138,523	54,587	3,787	3,303	62,863	53,427	
July, 1921	1,111,147	3,723,213	201,553	234,926	4,489	6,126	68,914	59,148	
July, 1920	1,358,147	2,035,015	277,248	382,432	14,654	9,791	117,300	102,799	
July, 1919	1,303,118	2,208,367	266,339	227,358	19,487	31,538	36,858	15,899	
July, 1918	1,465,223	1,734,965	138,108	236,809	20,000	36,494	35,917	31,363	
July, 1917	1,501,916	888,257	112,972	230,687	36,482	19,912	75,250	42,662	
July, 1916	1,632,245	1,107,464	100,441	113,106	27,454	10,870	123,406	59,202	
July, 1915	1,401,185	1,784,919	198,905	89,881	24,919	4,678	96,828	25,123	
August, 1914	675,873	546,941	75,316	29,673	21,028	7,453	52,413	6,205	
August, 1913	717,704	407,902	60,454	19,896	19,896	Not available	71,518	1,876	
August, 1912	848,021	548,101	52,622	8,135	23,753	6,539	77,029	866	
August, 1911	498,769	421,984	43,122	10,856	19,280	6,256	70,678	658	

# Stocks of Cotton in Consuming Establishments, in Public Storage and at Compresses in the United States



The above chart is based on the table on the following page.

# United States Stocks of Cotton in Consuming Establishments, in Public Storage and at Compresses

[American cotton is counted in running bales; foreign cotton, in equivalent 500-pound bales]

## Linters are not included

The table below does not include cotton in transit, in private storage or on plantations. It embraces merely the cotton in consuming establishments, in public storage and at compresses, as compiled monthly by the United States Bureau of the Census.

At End of —	1918-19			1919-20			1920-21			1921-22			1922-23			1923-24		
	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses	In Consuming Establishments	In Public Storage and at Compresses
August . . .	1,215,832	1,804,500	1,133,365	1,816,596	1,126,783	1,964,463	1,006,065	3,463,961	1,024,874	1,330,141	806,671	1,179,204	773,473	3,217,939	1,065,816	2,147,830	1,102,583	3,485,839
September . .	1,485,781	2,981,228	1,067,970	2,502,307	901,373	2,797,338	1,118,045	4,312,135	1,065,816	4,312,135	1,065,816	2,147,830	1,102,583	4,287,119	1,381,915	3,485,839	1,102,583	3,485,839
October . . .	1,499,327	3,911,915	1,065,139	3,687,141	940,480	4,132,967	1,398,138	1,981,831	1,724,488	1,981,831	1,724,488	3,770,542	1,438,813	4,197,955	1,917,231	3,770,542	1,438,813	3,770,542
November . . .	1,671,268	1,370,318	1,642,125	4,063,176	1,118,418	5,109,978	1,655,359	5,292,941	1,724,488	5,292,941	1,724,488	3,770,542	1,438,813	4,069,470	1,917,231	3,770,542	1,438,813	3,770,542
December . . .	1,751,724	1,671,085	1,836,763	4,161,208	1,251,122	5,623,616	1,738,138	5,206,063	1,917,231	5,206,063	1,917,231	2,966,466	1,633,332	4,485,952	1,988,115	2,966,466	1,633,332	2,966,466
January . . .	1,670,383	4,594,228	1,952,326	3,758,329	1,263,951	5,645,182	1,668,668	4,621,708	1,988,115	4,621,708	1,988,115	2,185,009	1,578,272	2,803,304	2,020,990	2,185,009	1,578,272	2,185,009
February . . .	1,557,654	4,557,411	1,809,368	3,530,651	1,327,155	5,503,139	1,595,242	4,211,862	2,020,990	4,211,862	2,020,990	2,033,837	1,965,714	2,379,697	2,033,837	2,033,837	1,965,714	2,033,837
March . . .	1,460,887	4,327,965	1,823,996	3,240,197	1,336,542	5,252,852	1,557,023	3,752,258	1,988,115	3,752,258	1,988,115	1,878,198	1,965,714	1,878,198	1,878,198	1,965,714	1,878,198	1,965,714
April . . .	1,379,332	3,976,257	1,811,527	2,978,158	1,315,706	5,026,894	1,461,340	3,213,483	1,634,107	3,213,483	1,634,107	1,580,219	1,634,107	1,580,219	1,634,107	1,580,219	1,634,107	1,580,219
May . . .	1,391,321	3,116,607	1,638,833	2,586,868	1,280,723	4,758,297	1,120,428	2,559,151	1,347,468	2,559,151	1,347,468	1,227,184	1,347,468	1,227,184	1,347,468	1,227,184	1,347,468	1,227,184
June . . .	1,363,049	2,765,771	1,554,274	2,301,016	1,203,361	4,300,386	1,330,903	1,953,478	1,488,165	1,953,478	1,488,165	938,903	1,488,165	938,903	1,488,165	938,903	1,488,165	938,903
July . . .	1,303,118	2,208,367	1,358,117	2,055,015	1,411,147	3,723,213	1,218,388	1,488,165	1,488,165	1,488,165	1,488,165	938,903	1,488,165	938,903	1,488,165	938,903	1,488,165	938,903

## United States Supply and Distribution of Cotton and Linters

[The statistics relate to the twelve months ending July 31, except 1912-13, which relate to the twelve months ending August 31. Quantities are given in running bales, except that round bales are counted as half bales and foreign cotton in equivalent 500-pound bales.]

Compiled by United States Bureau of the Census

	1912-13	1919-20	1920-21	1921-22	1922-23
<b>SUPPLY</b>					
On hand at beginning of year, total . . .	1,375,031	5,155,682	4,572,812	7,230,639	3,084,663
In consuming establishments, total . . .	542,191	1,569,957	1,635,365	1,312,500	1,356,911
In cotton-growing states . . . . .	101,114	749,621	757,461	519,293	583,446
In all other states . . . . .	441,077	820,336	877,904	793,207	773,465
In public storage and at compresses . . .	432,840	2,435,725	2,437,447	3,958,139	1,542,752
Elsewhere (estimated) . . . . .	400,000	1,150,000	500,000	1,960,000	185,000
Net imports . . . . .	229,268	682,911	210,606	351,921	494,783
Ginnings . . . . .	16,068,936	11,920,625	13,699,975	8,360,153	10,319,843
Sundries . . . . .	222,991	259,148	187,332	131,924	647,599
<b>DISTRIBUTION</b>					
Exported . . . . .	10,681,758	6,598,347	5,796,107	6,316,121	4,864,027
Consumed, total . . . . .	5,367,583	6,762,207	5,408,979	6,548,853	7,312,201
In cotton-growing states . . . . .	2,712,223	3,714,403	3,151,954	3,977,847	4,489,150
In all other states . . . . .	2,655,360	3,047,804	2,257,025	2,571,006	2,823,051
Destroyed by fire . . . . .	70,000	85,000	235,000	125,000	38,000
On hand at end of year, total . . . . .	1,776,885	4,572,812	7,230,639	3,084,663	2,256,058
In consuming establishments, total . . .	870,646	1,635,365	1,312,500	1,356,911	1,216,369 <sup>1</sup>
In cotton-growing states . . . . .	241,611	757,461	519,293	583,446	571,520
In all other states . . . . .	629,035	877,904	793,207	773,465	644,849
In public storage and at compresses . . .	556,239	2,437,447	3,958,139	1,542,752	974,689 <sup>1</sup>
Elsewhere (estimated) . . . . .	350,000	500,000	1,960,000	185,000	90,000 <sup>1</sup>

<sup>1</sup> Duplication of 25,000 bales in reports of mills and warehouses, so these items total 25,000 bales more than total on hand at end of year.

## Carry-over of Cotton

The term "carry-over" has several meanings. It may refer (1) simply to cotton held in the United States, or (2) American cotton held anywhere in the world, or (3) all kinds of cotton held anywhere in the world. Statistics of carry-over as issued by trade authorities differ widely from each other each year, not only because of the various meanings of the term, as just stated, but also because some authorities count the carry-over in running bales, disregarding the fact that Egyptian bales, for example, weigh approximately 750 pounds and Indian bales only 400, while others compute the quantities of foreign cottons in equivalent 500-pound bales, and some authorities include American linters while others do not.

Following are statistics of the amount of cotton carried over from each season for several years past, as computed, on different bases, by leading authorities.

### United States Carry-over of Cotton

The table below was compiled by the United States Bureau of the Census. It includes all cotton in all hands in the United States, *i.e.*, cotton held at mills, in public and private warehouses, at compresses, on plantations and in transit. Domestic cotton is counted in running bales, round bales being counted as half bales, and foreign cotton in equivalent 500-pound bales.

DATE	Including Linters	Exclusive of Linters
July 31, 1923 . . . . .	2,256,058	2,087,919
July 31, 1922 . . . . .	3,084,663	2,831,553
July 31, 1921 . . . . .	7,230,639	6,534,360
July 31, 1920 . . . . .	4,572,812	3,563,162
July 31, 1919 . . . . .	5,155,682	4,286,785
July 31, 1918 . . . . .	3,890,105	3,450,188
July 31, 1917 . . . . .	3,173,832	2,720,173
July 31, 1916 . . . . .	3,403,256	3,139,709
July 31, 1915 . . . . .	4,324,890	3,936,104
August 31, 1914 . . . . .	1,647,836	1,447,817
August 31, 1913 . . . . .	1,648,438	—
August 31, 1912 . . . . .	1,776,885	—

### World Carry-over of American Cotton

The table below was compiled by Henry G. Hester, Secretary of the New Orleans Cotton Exchange. It includes all American cotton held in the American cotton belt, — *i.e.*, at southern mills, at counted and uncounted interior towns, and on plantations, — stocks at northern mills and at the ports of the United States, and stocks at European ports and at European mills. This embraces practically all American cotton held anywhere in the world. The only stocks not included in this table are those in Japan and scattering stocks in the less important manufacturing countries

where some American cotton may be found, such as Canada and Mexico. The cotton is counted in running bales, round bales being counted as half bales.

DATE	Including Linters	Exclusive of Linters
July 31, 1923 . . . . .	2,573,000	2,396,000
July 31, 1922 . . . . .	4,879,000	4,547,000
July 31, 1921 . . . . .	9,364,000	8,699,000
July 31, 1920 . . . . .	6,216,000	5,216,000
July 31, 1919 . . . . .	6,909,000	6,094,000
July 31, 1918 . . . . .	4,422,000	4,018,000
July 31, 1917 . . . . .	4,305,000	3,688,000
July 31, 1916 . . . . .	5,105,000	4,742,000
July 31, 1915 . . . . .	7,701,000	7,551,000
August 31, 1914 . . . . .	4,564,000	4,399,000

### World Carry-over of All Kinds of Cotton

The table below was compiled by the United States Department of Agriculture. It includes all kinds of cotton held anywhere in the United States; American, Indian, Egyptian and Brazilian cotton afloat for Europe; stocks at Alexandria and Bombay; stocks at British and Continental ports, and mill stocks of all kinds in Europe. It does not include mill stocks outside of the United States and Europe, *i.e.*, in India, Japan, China, etc., where there are in all about 10 per cent of the world's spindles; stocks in the interior of Egypt, China and India; cotton afloat to Japan, United States and other parts of the world outside of Europe; stocks in South America; and scattering stocks in other parts of the world. American cotton is counted in running bales, round bales as half bales, and foreign cotton in equivalent 500-pound bales. American linters are not included.

DATE	Carry-over
July 31, 1923 . . . . .	6,341,000 <sup>1</sup>
July 31, 1922 . . . . .	9,323,000 <sup>1</sup>
July 31, 1921 . . . . .	10,714,000
July 31, 1920 . . . . .	5,846,000
July 31, 1919 . . . . .	5,436,000
July 31, 1918 . . . . .	4,163,000
July 31, 1917 . . . . .	4,477,000
July 31, 1916 . . . . .	5,379,000
July 31, 1915 . . . . .	8,352,000
August 31, 1914 . . . . .	7,519,000
August 31, 1913 . . . . .	6,463,000
August 31, 1912 . . . . .	6,809,000

<sup>1</sup> Bales of 478 pounds lint.

# World Supply and Consumption of American Cotton

The tables below, compiled by Henry G. Hester, Secretary of the New Orleans Cotton Exchange, show the world supply and consumption of American cotton, inclusive and exclusive of linters, season by season since 1914-15. In considering these statistics it should be borne in mind that they relate only to American cotton. They do not include Egyptian, Indian or other foreign growths. The figures of supply at the beginning of each season include mill stocks in the United States and Europe, stocks at counted and uncounted interior towns and on plantations in this country, and stocks at ports in this country and Europe. The statistics on consumption include consumption in this country and abroad. These statistics are in running bales.

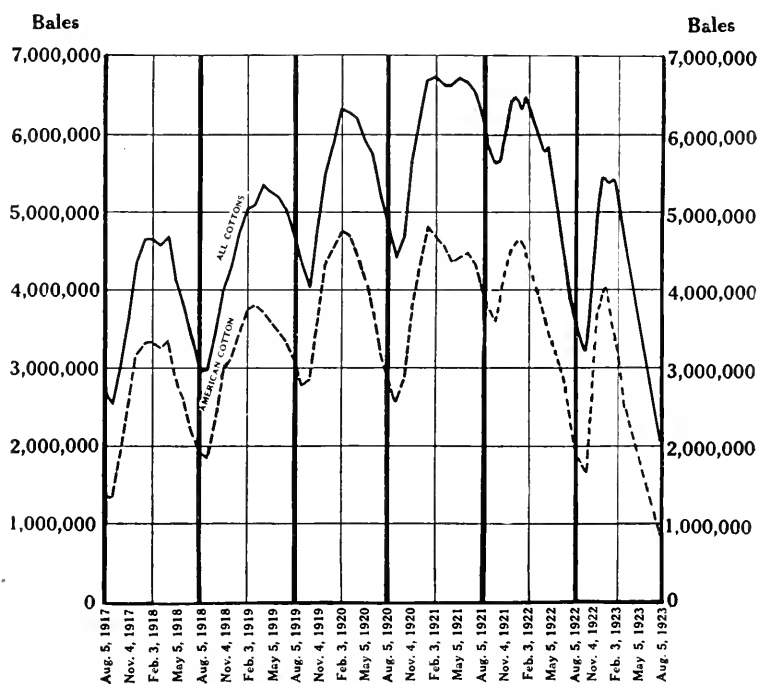
## Supply and Consumption, exclusive of Linters

COTTON SEASON, AUG. 1 TO JULY 31	Supply at Beginning of Season	Crop	Total Supply for Season	Consumption
1914-15 . . . . .	4,382,000	16,163,000	20,545,000	13,200,000
1915-16 . . . . .	7,312,000	11,119,000	18,431,000	13,636,000
1916-17 . . . . .	4,836,000	11,470,000	16,306,000	12,586,000
1917-18 . . . . .	3,846,000	11,131,000	14,977,000	10,975,000
1918-19 . . . . .	4,018,000	12,107,000	16,125,000	10,005,000
1919-20 . . . . .	6,094,000	11,404,000	17,498,000	12,275,000
1920-21 . . . . .	5,216,000	13,321,000	18,537,000	9,766,000
1921-22 . . . . .	8,699,000	8,053,000	16,752,000	12,107,000
1922-23 . . . . .	4,547,000	9,837,000	14,384,000	11,949,000
1923-24 . . . . .	2,396,000	—	—	—

## Supply and Consumption, including Linters

COTTON SEASON, AUG. 1 TO JULY 31	Supply at Beginning of Season	Crop	Total Supply for Season	Consumption
1914-15 . . . . .	4,564,000	17,004,000	21,568,000	13,834,000
1915-16 . . . . .	7,701,000	12,175,000	19,876,000	14,812,000
1916-17 . . . . .	5,105,000	12,966,000	18,071,000	13,892,000
1917-18 . . . . .	4,305,000	12,424,000	16,729,000	12,282,000
1918-19 . . . . .	4,422,000	13,070,000	17,492,000	10,535,000
1919-20 . . . . .	6,909,000	12,000,000	18,909,000	12,670,000
1920-21 . . . . .	6,216,000	13,750,000	19,966,000	10,330,000
1921-22 . . . . .	9,364,000	8,442,000	17,806,000	12,829,000
1922-23 . . . . .	4,879,000	10,424,000	15,303,000	12,631,000
1923-24 . . . . .	2,573,000	—	—	—

## World's Visible Supply of Cotton During Past Six Seasons



The above chart is based on the table on the following page.



# World's Visible Supply of Cotton during Past Five Seasons

[In thousands of running bales. Linters included]

New York Cotton Exchange Statistics

WEEK ENDING —		1918-19		1919-20		1920-21		1921-22		1922-23	
		General	American	General	American	General	American	General	American	General	American
August	4	2,954	1,907	4,724	3,109	4,833	2,868	6,192	4,024	3,692	1,865
	11	2,981	1,855	4,645	3,037	4,654	2,739	6,071	3,930	3,509	1,762
	18	2,892	1,781	4,531	2,954	4,555	2,627	5,935	3,830	3,363	1,671
	25	2,975	1,832	4,452	2,878	4,489	2,612	5,817	3,753	3,373	1,643
September	1	2,987	1,852	4,344	2,782	4,428	2,568	5,701	3,659	3,210	1,629
	8	3,016	1,895	4,194	2,730	4,363	2,541	5,665	3,654	3,219	1,689
	15	3,089	1,981	4,074	2,679	4,386	2,571	5,626	3,657	3,266	1,770
	22	3,213	2,128	4,013	2,690	4,398	2,620	5,674	3,778	3,455	1,996
October	29	3,362	2,253	3,950	2,740	4,508	2,754	5,802	3,940	3,692	2,265
	6	3,469	2,395	4,057	2,868	4,690	2,893	6,005	4,129	3,944	2,566
	13	3,609	2,510	4,256	3,065	4,940	3,087	6,178	4,309	4,263	2,869
	20	3,748	2,669	4,412	3,245	5,196	3,335	6,240	4,383	4,531	3,135
November	27	3,900	2,851	4,615	3,463	5,353	3,513	6,319	4,474	4,827	3,434
	3	3,984	2,966	4,848	3,700	5,654	3,768	6,387	4,556	5,027	3,670
	10	4,088	3,056	5,053	3,922	5,860	3,964	6,406	4,609	5,087	3,811
	17	4,227	3,142	5,222	4,088	6,017	4,107	6,430	4,632	5,219	3,925
December	24	4,275	3,160	5,402	4,227	6,126	4,243	6,445	4,658	5,253	3,973
	1	4,298	3,155	5,504	4,327	6,243	4,397	6,450	4,638	5,474	4,009
	8	4,373	3,217	5,656	4,431	6,419	4,544	6,417	4,625	5,420	3,957
	15	4,483	3,351	5,676	4,423	6,562	4,678	6,316	4,608	5,368	3,907
January	22	4,616	3,446	5,753	4,499	6,675	4,764	6,407	4,620	5,358	3,839
	29	4,689	3,453	5,870	4,565	6,762	4,805	6,472	4,661	5,441	3,800
	5	4,721	3,461	5,875	4,552	6,797	4,849	6,428	4,587	5,328	3,680
	12	4,931	3,638	6,110	4,689 <sup>1</sup>	6,784	4,840	6,500	4,561	5,316	3,635
February	19	4,976	3,697	6,060	4,678	6,843	4,824	6,512	4,466	5,296	3,513
	26	4,969	3,710	6,231	4,658	6,890	4,842	6,520	4,389	5,249	3,433
	2	5,038	3,749	6,317	4,751	6,836	4,794	6,447	4,273	5,177	3,324
	9	5,072	3,771	6,411	4,792	6,788	4,760	6,405	4,210	4,984	3,181
March	16	5,093	3,787	6,391	4,787	6,795	4,713	6,385	4,135	4,876	3,015
	23	5,124	3,823	6,391	4,791	6,799	4,725	6,256	4,080	4,761	2,890
	2	5,097	3,802	6,292	4,703	6,833	4,707	6,111	3,954	4,734	2,763
	9	5,060	3,762	6,162	4,600	6,869	4,676	5,985	3,907	4,672	2,674
April	16	5,057	3,759	6,152	4,555	6,880	4,627	5,918	3,793	4,614	2,579
	23	5,366	3,747	6,178	4,509	6,802	4,537	5,893	3,728	4,476	2,468
	30	5,388	3,758	6,179	4,501	6,813	4,549	5,842	3,657	4,388	2,359
	6	5,361	3,721	6,206	4,446	6,771	4,505	5,798	3,613	4,158	2,201
May	13	5,310	3,668	6,200	4,413	6,756	4,498	5,780	3,571	4,105	2,095
	20	5,328	3,676	6,186	4,344	6,775	4,494	5,703	3,518	4,035	1,978
	27	5,298	3,645	6,072	4,205	6,786	4,497	5,613	3,409	3,799	1,900
	4	5,270	3,605	5,939	4,135	6,793	4,518	5,507	3,332	3,615	1,813
June	11	5,211	3,556	6,028	4,098	6,840	4,574	5,406	3,262	3,401	1,720
	18	5,220	3,516	5,998	4,000	6,859	4,592	5,256	3,162	3,313	1,619
	25	5,183	3,482	5,873	3,876	6,780	4,553	5,181	3,095	3,187	1,538
	1	5,199	3,499	5,767	3,754	6,702	4,547	5,127	3,006	3,076	1,447
July	8	5,218	3,537	5,643	3,635	6,654	4,510	5,033	2,939	2,923	1,347
	15	5,192	3,501	5,564	3,516	6,679	4,511	4,834	2,792	2,824	1,286
	22	5,155	3,447	5,445	3,397	6,731	4,510	4,738	2,688	2,748	1,221
	29	5,107	3,396	5,286	3,275	6,657	4,442	4,592	2,567	2,641	1,145
August	6	5,040	3,364	5,246	3,222	6,520	4,353	4,458	2,441	2,502	1,090
	13	4,936	3,332	5,105	3,103	6,417	4,241	4,284	2,318	2,341	1,023
	20	4,903	3,285	5,028	2,999	6,328	4,166	4,047	2,170	2,256	962
	27	4,834	3,231	4,899	2,913	6,253	4,093	3,855	2,007	2,192	898
	31	—	—	4,911	2,944	6,268	4,113	3,793	1,968	2,129	870

<sup>1</sup> Adjusted.

### Calculated Total World's Cotton Spinning Spindles (000's on Basis of Returns made to the

	COUNTRIES	TOTAL ESTIMATED NUMBER OF SPINNING SPINDLES		MULE SPINDLES	
		HALF YEAR ENDING —		HALF YEAR ENDING —	
		July 31, 1923	Jan. 31, 1923	July 31, 1923	Jan. 31, 1923
	Europe:				
1	Great Britain . . . . .	56,583	56,613	44,043	43,650
2	France . . . . .	9,600	9,600 <sup>1</sup>	4,249	4,325
3	Germany . . . . .	9,382	9,605	4,320	4,423
4	Russia . . . . .	7,246	7,246 <sup>2</sup>	2,898	2,898
5	Italy . . . . .	4,570	4,560	844	846
6	Czecho-Slovakia . . . . .	3,508	3,502	1,822	1,929
7	Spain . . . . .	1,813	1,813	622	622
8	Belgium . . . . .	1,683	1,673	469	497
9	Switzerland . . . . .	1,513	1,519	844	851
10	Poland . . . . .	1,200	1,200	478	452
11	Austria . . . . .	1,023	1,023	529	474
12	Holland . . . . .	669	638	213	204
13	Sweden . . . . .	566	565	105	120
14	Portugal . . . . .	487	487	166	166
15	Finland . . . . .	241	239	64	64
16	Denmark . . . . .	97	95	13	13
17	Norway . . . . .	66	65	13	12
	Total . . . . .	100,247	100,443	61,692	61,546
	Asia:				
1	India . . . . .	7,331	7,331	1,154	1,135
2	Japan . . . . .	4,877	4,753	51	48
3	China . . . . .	2,680	2,552	—	—
	Total . . . . .	14,888	14,636	1,205	1,183
	America:				
1	U. S. America . . . . .	37,397	37,225	—	—
2	Canada . . . . .	1,076	1,076	464	303
3	Mexico . . . . .	770	770	5	8
4	Brazil . . . . .	1,700	1,680	—	—
	Total . . . . .	40,943	40,751	469	311
	Sundries . . . . .	275	254	—	—
	Grand total . . . . .	156,353	156,084	63,366	63,040

<sup>1</sup> Of these, 346,362 spindles which were destroyed during the war but have not yet been replaced.<sup>2</sup> Only 1,800,000 of these were in work throughout the six months under review.

omitted) for the Half Years July 31, 1923, and Jan. 31, 1923, International Cotton Federation's Statistics.

RING SPINDLES		SPINDLES SPINNING EGYPTIAN COTTON		SPINDLES IN COURSE OF ERECTION		
HALF YEAR ENDING —		HALF YEAR ENDING —		HALF YEAR ENDING —		
July 31, 1923	Jan. 31, 1923	July 31, 1923	Jan. 31, 1923	July 31, 1923	Jan. 31, 1923	
12,540	12,963	18,870	16,980	50	207	
5,351	4,929	2,257	2,266	150	218	2
5,062	5,182	791	688	90	77	3
4,348	4,348	150	100	—	—	4
3,726	3,714	444	424	53	20	5
1,686	1,573	263	119	6	9	6
1,191	1,191	155	155	—	—	7
1,214	1,176	39	33	32	34	8
669	668	833	756	6	25	9
722	748	116	119	24	45	10
494	549	49	75	—	—	11
456	434	—	—	16	96	12
461	445	18	12	1	14	13
321	321	18	10	10	2	14
177	175	2	3	—	2	15
84	82	—	—	—	—	16
53	53	—	—	—	—	17
38,555	38,551	24,005	21,740	438	749	
6,177	6,196	9	7	196	392	1
4,826	4,705	407	348	339	241	2
2,680	2,552	—	—	700	620	3
13,683	13,453	416	355	1,235	1,253	
37,397	37,225	?	?	1,000 <sup>1</sup>	?	1
612	773	57	—	—	—	2
765	762	23	—	7	—	3
1,700	1,680	—	—	?	?	4
40,474	40,440	80	—	1,007	—	
275	254	55	20	—	1	
92,987	92,698	24,556	22,115	2,680	2,003	

<sup>1</sup> Estimate.

# Calculated Total World's Cotton Mill Consumption for the Cotton International

COUNTRIES		IN THOUSANDS OF ACTUAL BALES (REGARDLESS OF WEIGHT)							
		AMERICAN				EAST INDIAN			
		HALF YEAR ENDING —				HALF YEAR ENDING —			
		July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922	July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922
	Europe:								
1	Great Britain . . .	823	1,096	1,168	1,107	68	39	27	27
2	France . . .	390	400	450	349	96	74	78	41
3	Germany . . .	292	448	469	442	87	126	110	109
4	Russia . . .	61	61	24	3	—	—	—	—
5	Italy . . .	274	327	309	264	131	108	99	101
6	Czecho-Slovakia . .	87	91	142	167	41	20	23	27
7	Spain . . .	94	155	180	114	28	37	30	16
8	Belgium . . .	62	67	69	67	68	59	49	51
9	Switzerland . . .	26	31	29	26	4	3	3	3
10	Poland . . .	74	93	88	82	24	20	19	18
11	Austria . . .	27	34	41	45	23	18	12	13
12	Holland . . .	38	43	43	43	13	12	12	12
13	Sweden . . .	36	42	37	37	2	2	1	1
14	Portugal . . .	25	21	21	16	—	—	—	—
15	Finland . . .	16	16	15	18	—	—	—	—
16	Denmark . . .	11	15	8	10	1	—	—	—
17	Norway . . .	3	4	4	3	—	—	—	—
	Europe total	2,339	2,944	3,097	2,793	586	518	463	419
	Asia:								
1	India . . .	5	21	19	35	1,015	1,182	1,102	1,105
2	Japan . . .	330	393	431	365	877	845	785	695
3	China . . .	37	73	95	86	186	171	214	132
	Asia total	372	487	545	486	2,078	2,198	2,101	1,932
	America:								
1	U. S. America . .	3,198	3,125	2,760	2,855	13	8	5	6
2	Canada . . .	83	92	83	73	—	—	—	—
3	Mexico . . .	9	11	11	39	—	—	—	—
4	Brazil . . .	—	—	—	—	—	—	—	—
	America total	3,290	3,228	2,854	2,967	13	8	5	6
	Sundries . . .	3	3	10	—	1	—	—	—
	Half year totals . .	6,004	6,662	6,506	6,246	2,678	2,724	2,569	2,357
	Grand total . .	12,666		12,752		5,402		4,926	
	Cotton season . .	1923		1922		1923		1922	

**Seasons 1923 and 1922 on Basis of Spinners' Returns made to the Cotton Federation**

IN THOUSANDS OF ACTUAL BALES (REGARDLESS OF WEIGHT)											
EGYPTIAN				SUNDRIES				TOTAL			
HALF YEAR ENDING —				HALF YEAR ENDING —				HALF YEAR ENDING —			
July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922	July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922	July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922
209	184	168	168	164	187	125	74	1,264	1,506	1,488	1,376
47	46	45	29	95	31	28	15	628	551	601	434
18	21	20	21	10	12	10	11	407	607	609	583
1	1	4	3	151	234	229	366	213	296	257	372
24	20	14	8	4	5	3	2	433	460	425	375
6	2	4	5	4	3	4	2	138	116	173	201
17	16	15	4	2	2	—	3	141	210	225	137
2	2	2	2	7	5	1	2	139	133	121	122
16	14	13	13	1	—	—	1	47	48	45	43
3	4	3	1	2	8	7	2	103	125	117	103
2	1	1	1	1	—	—	1	53	53	54	60
—	—	—	—	1	—	—	—	52	55	55	55
1	1	—	—	—	—	—	—	39	45	38	38
2	1	1	1	24	13	11	19	51	35	33	36
—	—	—	—	—	—	—	—	16	16	15	18
—	—	—	—	—	1	—	—	12	16	8	10
—	—	—	—	—	—	—	—	3	4	4	3
348	313	290	256	466	501	418	498	3,739	4,276	4,268	3,966
1	4	7	3	15	9	23	20	1,036	1,216	1,151	1,163
17	14	14	12	69	31	30	40	1,293	1,283	1,260	1,112
1	3	1	1	515	623	450	417	739	870	760	636
19	21	22	16	599	663	503	477	3,068	3,369	3,171	2,911
103	77	74	82	51	47	54	60	3,365	3,257	2,893	3,003
2	—	—	1	—	—	—	—	85	92	83	74
—	—	—	—	54	62	57	25	63	73	68	64
—	—	—	—	395	275	250	227	395	275	250	227
105	77	74	83	500	384	361	312	3,908	3,697	3,294	3,368
8	7	—	7	32	32	146	21	44	42	156	28
480	418	386	362	1,597	1,580	1,428	1,308	10,759	11,384	10,889	10,273
898		748		3,177		2,736		22,143		21,162	
1923		1922		1923		1922		1923		1922	

### Consumption of Cotton, per Thousand Spindles, by Countries, for Years 1913, 1920, 1921, 1922 and 1923

[In running bales. Statistics are for the year ending Aug. 31, 1913, but for years ending July 31 thereafter]

Compiled by the International Federation of Master Cotton Spinners' and Manufacturers' Associations

COUNTRIES	1913	1920	1921	1922	1923
World . . . . .	156.30	— <sup>1</sup>	116.17	137.38	141.27
Great Britain . . . . .	76.80	63.65	35.97	50.69	48.92
Germany . . . . .	157.95	92.70	114.10	126.21	111.95
Russia . . . . .	269.88	?	?	567.27	270.94
France . . . . .	136.49	111.30	78.99	110.86	126.00
India . . . . .	357.94	318.76	331.74	336.72	307.06
Czecho-Slovakia and Austria . . . . .	170.52	61.03 <sup>2</sup>	72.62 <sup>2</sup>	104.06 <sup>2</sup>	71.25 <sup>2</sup>
Italy . . . . .	171.73	170.54	176.56	175.65	195.91
Spain . . . . .	179.35	216.67	165.07	200.53	194.06
Japan . . . . .	690.63	660.30	537.14	519.27	535.00
Switzerland . . . . .	70.45	57.60	53.90	57.57	48.77
Belgium . . . . .	172.47	160.08	133.50	151.28	161.94
Sweden . . . . .	215.83	175.15	110.68	133.48	148.08
Portugal . . . . .	163.64	140.02	251.70	156.03	177.15
Holland . . . . .	177.17	181.79	170.46	175.52	165.56
Denmark . . . . .	284.87	254.49	116.92	188.27	296.00
Norway . . . . .	154.20	170.50	115.14	111.92	112.66
U. S. America . . . . .	183.57	179.11	133.95	159.82	177.47
Canada . . . . .	132.70	173.93	136.56	149.68	163.94
Poland . . . . .	312.80	64.52	114.56	184.96	189.61
Mexico . . . . .	226.99	174.89	168.16	179.88	177.47
Brazil . . . . .	423.57	228.00	378.90	300.78	328.61
Finland . . . . .	156.54	109.48	120.77	142.22	133.67

<sup>1</sup> A compilation of world figures could not be undertaken in 1920.

<sup>2</sup> Exclusive of Austria.

# **Mill Stocks of Cotton per Thousand Spindles, by Countries, for Years 1913, 1920, 1921, 1922 and 1923**

[In running bales. Statistics are as of August 31 for 1913, but as of July 31 thereafter]

Compiled by the International Federation of Master Cotton Spinners' and Manufacturers' Associations

COUNTRIES	1913	1920	1921	1922	1923
World . . . . .	27.87	— <sup>1</sup>	29.46	32.79	24.73
Great Britain . . . . .	6.82	7.69	5.97	5.48	4.19
Germany . . . . .	25.25	28.50	20.28	20.65	9.26
Russia . . . . .	61.04	?	?	?	36.50
France . . . . .	22.25	26.34	12.60	22.27	17.92
India . . . . .	104.34	147.23	156.07	135.30	99.98
Czecho-Slovakia and Austria . . .	31.42	22.47 <sup>2</sup>	12.31 <sup>2</sup>	15.77 <sup>2</sup>	8.83 <sup>2</sup>
Italy . . . . .	23.80	56.50	48.10	39.46	35.23
Spain . . . . .	20.38	11.11	47.37	81.17	20.41
Japan . . . . .	255.45	333.34	176.25	194.68	160.12
Switzerland . . . . .	14.23	26.25	21.69	17.71	31.07
Belgium . . . . .	29.75	46.21	38.55	27.35	29.71
Sweden . . . . .	38.12	54.25	34.30	21.78	22.95
Portugal . . . . .	17.26	10.76	30.04	19.89	24.63
Holland . . . . .	24.78	48.63	38.83	42.13	25.43
Denmark . . . . .	14.77	27.47	21.74	32.77	30.90
Norway . . . . .	23.95	70.00	25.05	22.07	15.20
U. S. America . . . . .	22.81	37.83	30.21	32.27	28.61
Canada . . . . .	32.92	49.38	31.03	25.72	23.23
Poland . . . . .	90.75	15.78	20.56	22.11	16.66
Mexico . . . . .	24.63	45.20	51.55	47.43	40.26
Brazil . . . . .	108.76	55.72	21.56	91.25	64.70
Finland . . . . .	21.32	16.50	16.01	16.27	8.30

<sup>1</sup> A compilation of world figures could not be undertaken in 1920.

<sup>2</sup> Exclusive of Austria.

# Calculated Total World's Cotton Mill Stock at the End of the Cotton International

COUNTRIES		IN THOUSANDS OF ACTUAL BALES (REGARDLESS OF WEIGHT)							
		AMERICAN				EAST INDIAN			
		HALF YEAR ENDING —				HALF YEAR ENDING —			
		July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922	July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922
Europe:									
1	Great Britain . . .	104	152	183	200	29	14	14	8
2	France . . . . .	88	116	124	109	50	30	49	20
3	Germany . . . . .	58	75	130	143	32	33	53	43
4	Russia . . . . .	26	13	18	3	—	—	—	—
5	Italy . . . . .	90	120	119	126	57	45	50	52
6	Czecho-Slovakia . .	18	25	42	40	10	6	10	11
7	Spain . . . . .	32	27	118	15	3	4	16	1
8	Belgium . . . . .	17	27	21	26	28	19	22	26
9	Switzerland . . . .	11	14	14	21	3	2	2	2
10	Poland . . . . .	12	14	14	9	6	6	9	8
11	Austria . . . . .	7	10	14	11	11	5	6	6
12	Holland . . . . .	10	15	16	10	8	4	10	6
13	Sweden . . . . .	11	14	11	18	2	1	1	1
14	Portugal . . . . .	6	5	6	4	—	—	—	—
15	Finland . . . . .	2	6	4	3	—	—	—	—
16	Denmark . . . . .	3	3	3	1	—	—	—	—
17	Norway . . . . .	1	1	1	1	—	—	—	—
Europe total		496	637	838	740	239	169	242	184
Asia:									
1	India . . . . .	5	14	19	21	717	595	882	764
2	Japan . . . . .	160	167	307	316	570	378	565	459
3	China . . . . .	20	25	55	53	88	64	110	48
Asia total		185	206	381	390	1,375	1,037	1,557	1,271
America:									
1	U. S. America . . .	977	1,908	1,124	1,592	9	3	6	4
2	Canada . . . . .	24	46	27	36	—	—	—	—
3	Mexico . . . . .	8	4	4	10	—	—	—	—
4	Brazil . . . . .	—	—	—	—	—	—	—	—
America total		1,009	1,958	1,155	1,638	9	3	6	4
Sundries . . . . .		3	3	1	—	—	—	—	—
Halfyear totals		1,693	2,804	2,375	2,768	1,623	1,209	1,805	1,459



**Seasons 1923 and 1922, on Basis of Spinners' Returns made to the Cotton Federation**

IN THOUSANDS OF ACTUAL BALES (REGARDLESS OF WEIGHT)											
EGYPTIAN				SUNDRIES				TOTAL			
HALF YEAR ENDING —				HALF YEAR ENDING —				HALF YEAR ENDING —			
July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922	July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922	July 31, 1923	Jan. 31, 1923	July 31, 1922	Jan. 31, 1922
69	63	71	60	35	40	43	36	237	269	311	304
23	26	23	16	11	17	17	7	172	189	213	152
5	8	8	10	5	6	5	5	100	122	196	201
5	1	1	2	42	70	193	70	73	84	212	75
12	12	8	7	2	2	2	2	161	179	179	187
2	1	2	3	1	1	2	1	31	33	56	55
1	8	10	2	1	—	2	—	37	39	146	18
1	1	1	1	3	1	1	1	49	48	45	54
11	11	10	10	1	1	1	1	26	28	27	34
2	1	2	1	1	1	3	1	21	22	28	19
1	—	1	1	—	1	—	—	19	16	21	18
—	—	—	—	—	—	—	—	18	19	26	16
1	—	—	—	—	—	—	—	14	15	12	19
—	—	—	—	6	4	3	6	12	9	9	10
—	—	—	—	—	—	—	—	2	6	4	3
—	—	—	—	—	—	—	—	3	3	3	1
—	—	—	—	—	—	—	—	1	1	1	1
133	132	137	113	108	144	272	130	976	1,082	1,489	1,167
1	4	11	7	10	2	18	26	733	615	930	818
21	22	19	18	30	35	13	13	781	602	904	806
—	—	1	2	103	267	149	217	211	356	315	320
22	26	31	27	143	304	180	256	1,725	1,573	2,149	1,944
60	43	43	44	24	23	34	31	1,070	1,977	1,207	1,671
1	—	—	1	—	—	—	—	25	46	27	37
1	—	—	—	22	40	32	24	31	44	36	34
—	—	—	—	74	105	146	156	74	105	146	156
62	43	43	45	120	168	212	211	1,200	2,172	1,416	1,898
3	3	—	9	25	18	13	5	31	24	14	14
220	204	211	194	396	634	677	602	3,932	4,851	5,068	5,023

## Exports of Cotton from Alexandria, Egypt

[In cantars of 99.049 pounds each]

From statistics compiled by the Alexandria General Produce Association

WEEK ENDING —	1921-22		1922-23		1923-24	
	Week	Since Sept. 1	Week	Since Sept. 1	Week	Since Sept. 1
September 7	138,282	141,393	57,112	57,112	51,895	35,277
14	43,972	185,365	23,116	80,228	64,165	99,442
21	177,329	362,694	92,015	172,243	72,758	172,200
28	149,052	511,746	65,662	237,905	86,338	258,538
October 5	181,023	692,769	106,965	344,870	151,956	410,494
12	81,047	773,816	84,713	429,583	144,080	554,574
19	181,414	955,230	131,727	561,310	141,166	695,740
26	164,015	1,119,245	238,120	799,430	166,872	862,612
November 2	89,023	1,208,268	151,022	950,452	205,563	1,068,175
9	287,019	1,495,287	277,667	1,228,119	191,781	1,259,956
16	123,191	1,618,478	207,299	1,435,418	323,468	1,583,424
23	136,624	1,755,102	302,919	1,738,337	251,572	1,834,996
30	89,757	1,844,859	346,760	2,085,097	407,557	2,242,553
December 7	150,712	1,995,571	199,501	2,284,598	463,759	2,706,312
14	237,905	2,233,476	402,799	2,687,397	251,309	2,957,621
21	81,104	2,314,580	205,119	2,892,516	210,289	3,167,910
28	121,609	2,436,189	227,487	3,120,003	251,560	3,419,470
January 4	127,765	2,563,954	167,911	3,287,914	95,990	3,515,460
11	160,741	2,724,695	229,983	3,517,897	209,608	3,725,068
18	141,797	2,866,492	200,182	3,718,079	258,276	3,983,344
25	109,986	2,976,478	257,185	3,975,264	206,750	4,190,094
February 2	120,441	3,096,919	221,590	4,196,854	—	—
9	201,708	3,298,627	209,602	4,397,456	—	—
16	141,773	3,440,400	176,907	4,574,363	—	—
23	104,383	3,544,783	187,891	4,762,254	—	—
March 2	86,208	3,630,991	135,216	4,897,470	—	—
9	149,613	3,780,604	195,465	5,092,935	—	—
16	86,751	3,867,355	173,893	5,266,828	—	—
23	55,808	3,923,163	123,794	5,390,622	—	—
30	102,517	4,025,680	110,862	5,501,484	—	—
April 6	103,337	4,129,017	122,495	5,623,979	—	—
13	41,352	4,170,369	166,921	5,790,900	—	—
20	88,481	4,258,850	83,469	5,874,369	—	—
27	105,934	4,364,784	126,448	6,000,817	—	—
May 4	38,550	4,403,334	63,912	6,064,729	—	—
11	46,888	4,450,222	109,954	6,174,683	—	—
18	62,004	4,512,226	36,973	6,211,656	—	—
25	151,138	4,663,364	93,758	6,305,414	—	—
June 1	97,575	4,760,939	73,836	6,379,250	—	—
8	125,493	4,886,432	57,884	6,437,134	—	—
15	66,714	4,953,146	80,070	6,517,204	—	—
22	107,405	5,060,551	42,449	6,559,653	—	—
29	80,428	5,140,979	72,252	6,631,905	—	—
July 6	91,415	5,232,394	80,403	6,712,308	—	—
13	86,098	5,318,492	68,981	6,781,289	—	—
20	91,618	5,410,110	53,977	6,835,266	—	—
27	61,285	5,471,395	31,554	6,866,820	—	—
August 3	29,678	5,501,073	79,021	6,945,841	—	—
10	102,364	5,603,437	69,894	7,015,735	—	—
17	53,266	5,656,703	49,542	7,065,277	—	—
24	66,254	5,722,957	55,901	7,121,178	—	—
31 <sup>1</sup>	81,710	5,804,667	32,798	7,153,976	—	—

<sup>1</sup> Adjusted total.

# Receipts of Cotton at Alexandria, Egypt

[In cantars of 99.049 pounds each]

From statistics compiled by the Alexandria General Produce Association

WEEK ENDING —	1921-22		1922-23		1923-24	
	Week	Since Sept. 1	Week	Since Sept. 1	Week	Since Sept. 1
September 7	35,268	58,681	27,913	32,454	50,552	50,552
14	75,056	133,737	26,627	59,081	61,630	112,182
21	93,436	227,173	45,919	105,000	95,596	207,778
28	155,754	382,927	160,992	265,992	196,006	403,784
October 5	165,030	547,957	225,100	491,101	226,326	630,110
12	241,268	789,225	305,517	796,618	292,585	922,695
19	328,178	1,117,403	363,697	1,160,315	328,208	1,250,903
26	306,106	1,423,509	366,646	1,526,961	335,292	1,586,195
November 2	212,166	1,635,675	386,519	1,913,480	381,661	1,967,856
9	212,595	1,848,270	375,873	2,289,353	330,786	2,298,642
16	183,073	2,031,343	440,076	2,729,429	439,141	2,737,783
23	208,833	2,240,176	358,763	3,088,192	471,608	3,209,391
30	193,072	2,433,248	338,455	3,426,647	419,846	3,629,237
December 7	174,824	2,608,072	294,977	3,721,624	317,478	3,946,715
14	95,850	2,703,922	228,149	3,949,773	308,320	4,255,035
21	145,066	2,848,988	196,444	4,146,217	288,173	4,543,208
28	204,121	3,053,109	216,331	4,362,548	220,854	4,764,062
January 4	204,584	3,257,693	171,688	4,534,236	199,028	4,963,090
11	170,752	3,428,445	163,179	4,697,415	145,276	5,108,366
18	106,869	3,535,314	164,174	4,861,589	74,456	5,182,822
25	116,692	3,652,006	161,325	5,022,914	119,578	5,302,400
February 2	98,571	3,750,577	145,873	5,168,787	—	—
9	113,685	3,864,262	117,890	5,286,677	—	—
16	98,764	3,963,026	156,241	5,442,918	—	—
23	98,657	4,061,683	173,610	5,616,528	—	—
March 2	77,415	4,139,098	135,144	5,751,672	—	—
9	100,395	4,239,493	128,402	5,880,074	—	—
16	63,635	4,303,128	112,314	5,992,388	—	—
23	86,470	4,389,598	67,367	6,059,755	—	—
30	70,474	4,460,072	65,657	6,125,412	—	—
April 6	91,601	4,551,673	95,721	6,221,133	—	—
13	49,379	4,601,052	49,366	6,270,499	—	—
20	83,958	4,685,010	62,228	6,332,727	—	—
27	40,154	4,725,164	59,909	6,392,636	—	—
May 4	53,083	4,778,247	111,368	6,504,004	—	—
11	34,789	4,813,036	56,319	6,560,323	—	—
18	45,342	4,858,378	13,616	6,573,939	—	—
25	50,290	4,908,668	13,413	6,587,352	—	—
June 1	29,787	4,938,455	3,904	6,591,256	—	—
8	39,050	4,977,505	5,764	6,597,020	—	—
15	66,296	5,043,801	2,804	6,599,824	—	—
22	65,231	5,109,032	8,405	6,608,229	—	—
29	53,892	5,162,924	5,331	6,613,560	—	—
July 6	54,831	5,217,755	6,388	6,619,948	—	—
13	38,575	5,256,330	7,831	6,627,779	—	—
20	30,984	5,287,314	2,098	6,629,877	—	—
27	17,729	5,305,043	475	6,630,352	—	—
August 3	11,531	5,316,574	3,523	6,633,875	—	—
10	12,307	5,328,881	1,579	6,635,454	—	—
17	17,623	5,346,504	1,742	6,637,195	—	—
24	5,754	5,352,258	6,718	6,643,914	—	—
31 <sup>1</sup>	—	5,358,284	15,764	6,659,678	—	—

<sup>1</sup> Adjusted total.

# Stock of Cotton at Alexandria, Egypt

[In cantars of 99.049 pounds each]

From statistics compiled by the Alexandria General Produce Association

WEEK ENDING—	1918-19	1919-20	1920-21	1921-22	1922-23	1923-24
September 7	958,813	416,170	410,834	1,752,288	1,369,946	818,275
14	923,411	429,121	439,279	1,783,372	1,310,853	815,740
21	897,519	392,148	484,923	1,699,479	1,264,757	838,578
28	1,002,779	543,640	536,996	1,706,181	1,360,087	948,246
October 5	1,129,491	734,951	618,530	1,690,188	1,478,231	1,022,616
12	1,297,183	944,857	738,784	1,850,409	1,699,035	1,171,121
19	1,530,339	1,125,446	846,268	1,997,173	1,931,005	1,358,163
26	1,637,489	1,202,826	936,360	2,139,264	2,059,531	1,526,583
November 2	1,918,892	1,327,932	963,525	2,262,407	2,295,028	1,702,681
9	2,139,497	1,390,592	1,056,714	2,187,983	2,393,234	1,841,686
16	2,417,229	1,484,894	1,186,799	2,247,865	2,626,011	1,957,359
23	2,549,445	1,491,481	1,302,608	2,320,074	2,681,855	2,177,395
30	2,669,517	1,504,016	1,365,353	2,423,389	2,673,550	2,189,684
December 7	2,784,735	1,751,843	1,357,205	2,447,501	2,769,026	2,043,403
14	2,922,507	1,740,085	1,352,749	2,305,446	2,594,376	2,100,414
21	2,976,346	1,790,408	1,398,337	2,369,408	2,585,701	2,178,298
28	2,984,079	1,756,071	1,435,382	2,451,920	2,574,545	2,147,592
January 4	3,035,951	1,808,319	1,468,932	2,528,739	2,578,322	2,250,630
11	3,115,759	1,729,456	1,504,476	2,538,750	2,511,518	2,186,298
18	2,983,493	1,596,662	1,550,687	2,503,822	2,475,510	2,002,478
25	2,895,893	1,532,183	1,605,751	2,510,528	2,379,656	1,915,306
February 2	2,961,386	1,386,871	1,608,863	2,488,658	2,303,933	—
9	3,057,064	1,332,049	1,667,302	2,400,635	2,221,221	—
16	3,065,459	1,215,424	1,714,975	2,357,626	2,200,555	—
23	3,187,567	1,154,054	1,777,663	2,351,900	2,186,274	—
March 2	3,145,857	1,071,368	1,812,806	2,343,107	2,186,202	—
9	3,074,735	1,068,026	1,758,721	2,293,889	2,119,139	—
16	3,064,459	1,048,168	1,755,203	2,270,773	2,057,560	—
23	3,010,211	999,363	1,755,985	2,301,435	2,001,133	—
30	2,890,648	974,473	1,637,577	2,269,392	1,955,928	—
April 6	2,886,352	953,775	1,720,170	2,257,656	1,929,154	—
13	2,863,855	942,706	1,765,910	2,265,683	1,811,599	—
20	2,821,869	914,838	1,819,519	2,261,160	1,790,358	—
27	2,729,077	890,083	1,854,747	2,195,380	1,723,819	—
May 4	2,664,558	876,605	1,893,427	2,209,913	1,771,275	—
11	2,682,210	847,922	1,906,099	2,197,814	1,717,640	—
18	2,704,141	824,051	1,985,836	2,181,152	1,694,283	—
25	2,590,543	810,250	2,019,368	2,080,304	1,613,938	—
June 1	2,607,160	788,693	1,994,712	2,012,516	1,544,006	—
8	2,609,157	739,212	2,077,213	1,926,073	1,491,886	—
15	2,613,275	724,981	1,960,186	1,925,655	1,414,620	—
22	2,508,284	710,472	1,989,612	1,883,481	1,380,576	—
29	2,412,160	666,600	2,008,522	1,856,945	1,313,655	—
July 6	2,301,688	646,668	2,024,276	1,820,361	1,239,640	—
13	2,216,719	623,878	2,015,763	1,772,838	1,178,490	—
20	2,084,532	624,837	2,005,346	1,712,204	1,126,611	—
27	2,059,581	601,342	1,991,954	1,668,648	1,095,532	—
August 3	1,775,937	559,740	1,978,955	1,650,501	1,020,034	—
10	1,742,042	545,730	1,978,387	1,560,444	951,719	—
17	1,644,368	531,718	1,960,995	1,524,801	903,919	—
24	1,559,477	519,371	1,947,707	1,464,301	854,736	—
31	830,496	520,544	1,967,498	1,399,145	837,702	—

# Egyptian Cotton Exports, by Countries of Destination, during Egyptian Cotton Season, from September 1 to August 31

[In running Egyptian bales]

Compiled by the Alexandria General Produce Association

	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	1920-21	1921-22	1922-23
Austria . . . . .	111,824	—	—	—	—	—	—	—	—	—
Belgium . . . . .	2,676	—	—	—	—	—	812	2,331	4,235	7,108
England . . . . .	431,564	379,451	355,639	346,196	503,597	459,774	345,878	223,292	353,275	403,045
France . . . . .	101,643	27,107	45,812	28,063	44,560	78,487	50,089	40,266	83,198	114,185
Germany . . . . .	16,399	—	—	—	—	—	5,874	8,558	16,582	19,092
Greece and Turkey . . . . .	3,933	2,516	40	143	4,891	2,602	926	2,676	2,930 <sup>1</sup>	792
Holland . . . . .	26,121	—	—	—	—	—	1,811	2,680	3,443	3,627
India and China . . . . .	945	475	185	—	—	—	—	2,060	1,260	1,627
Italy . . . . .	62,856	167,701	52,516	54,726	50,140	49,328	52,111	77,775	90,257	117,146
Japan . . . . .	19,863	18,169	25,801	20,682	18,218	22,160	14,256	18,686	19,753	33,711
Portugal . . . . .	917	756	801	929	—	250	635	763	650	925
Russia . . . . .	78,989	7,528	42,619	32,446	—	—	—	—	—	1,450
Spain . . . . .	20,581	23,204	20,332	12,534	16,911	10,436	8,805	14,671	19,399	29,557
United States . . . . .	91,412	174,382	184,544	134,891	75,865	95,262	256,555	51,130	168,136	211,417
Other countries . . . . .	540	31,442	—	—	—	10	15	527	410	1,646
Total . . . . .	970,263	832,731	728,319	630,610	714,182	718,309	737,857	445,415	763,528	945,328

<sup>1</sup> Greece and Syria.

NOTE. — This table shows only the destination of the cotton as given when the cotton was shipped from Egypt. Some of the cotton was reshipped from these countries of initial destination and was finally consumed in other countries; for example, some of the cotton reported here as taken by Great Britain was reshipped by the latter to the United States.

## Great Britain Raw Cotton Trade and Distribution

[000's omitted]

From the Annual Circular of the Liverpool Cotton Association

YEAR	IMPORTS					EXPORTS		CONSUMPTION		STOCK AT END OF SEASON		YEAR
	American	Brazilian	Egyptian, etc.	Peruvian, etc.	East Indian	Total	Average Weight of Bales	Total	Average Weight of Bales	Liverpool	Great Britain	
1840	1,238	85	38	22	216	1,599	365	120	367	366	584	1840
1850	1,181	172	79	6	308	1,749	392	272	388	455	622	1850
1860	2,581	163	109	16	563	3,366	424	608	429	546	794	1860
1870	1,664	403	220	112	1,063	3,462	380	658	386	379	547	1870
1880	2,634	123	240	73	570	3,640	434	531	444	478	681	1880
1890	2,918	150	272	66	604	4,010	467	477	475	910	1,179	1890
1900-01	3,028	39	389	55	128	3,639	506	375	506	366	506	1900-01
1910-11	3,399	125	603	127	252	4,506	503	557	498	402	724	1910-11
1911-12	4,305	78	590	151	106	5,230	507	642	503	595	1,087	1911-12
1912-13	3,645	292	594	193	136	4,737	506	527	501	572	994	1912-13
1913-14	3,507	286	570	249	264	4,876	492	437	491	886	1,225	1913-14
1914-15	4,048	40	559	206	277	5,130	504	605	496	1,462	1,815	1914-15
1915-16	2,698	5	557	197	151	3,611	513	494	497	644	962	1915-16
1916-17	2,646	17	442	191	96	3,392	512	204	505	268	585	1916-17
1917-18	2,276	25	481	143	211	3,139	512	3	506	251	760	1917-18
1918-19	2,490	13	411	165	84	3,166	510	75	521	659	900	1918-19
1919-20	3,268	79	623	292	200	4,462	507	449	503	1,015	1,479	1919-20
1920-21	1,716	15	252	226	93	2,302	505	291	512	1,085	1,474	1920-21
1921-22	1,841	111	417	309	62	2,710	506	224	497	787	1,163	1921-22
1922-23	1,335	89	496	299	243	2,462	508	191	496	399	683	1922-23

NOTE. — Through 1890, the import, export, and consumption figures were for year ending December 31; from 1900-01 through 1913-14 the figures are for year ending August 31; commencing with 1914-15 the figures are for year ending July 31.

# Indian Cotton Exports by Countries of Destination

[Fiscal years ending March 31]

Textile Division, Bureau of Foreign and Domestic Commerce

COUNTRIES	1913-14	1920-21	1921-22	1922-23
	Tons <sup>1</sup>	Tons <sup>1</sup>	Tons <sup>1</sup>	Tons <sup>1</sup>
United Kingdom . . . . .	19,434	17,144	6,390	34,220
Germany . . . . .	84,278	35,959	41,918	46,891
Netherlands . . . . .	—	2,110	958	1,717
Belgium . . . . .	54,480	43,378	35,411	45,011
France . . . . .	25,513	6,867	10,122	22,557
Spain . . . . .	8,254	13,675	5,387	11,726
Italy . . . . .	41,449	38,016	27,570	43,094
Austria-Hungary . . . . .	37,342	6,098	5,978 <sup>2</sup>	7,595 <sup>2</sup>
Ceylon . . . . .	—	685	484	926
Indo-China . . . . .	—	1,620	5,275	3,553
China . . . . .	9,686	34,347	77,758	88,803
Japan . . . . .	241,742	167,681	314,333	289,465
United States . . . . .	—	1,675	1,639	3,898
Other countries . . . . .	9,623	1,430	579	941
Total . . . . .	531,801	370,585	533,802	600,397

<sup>1</sup> 2,240 pounds each.

<sup>2</sup> Austria only.

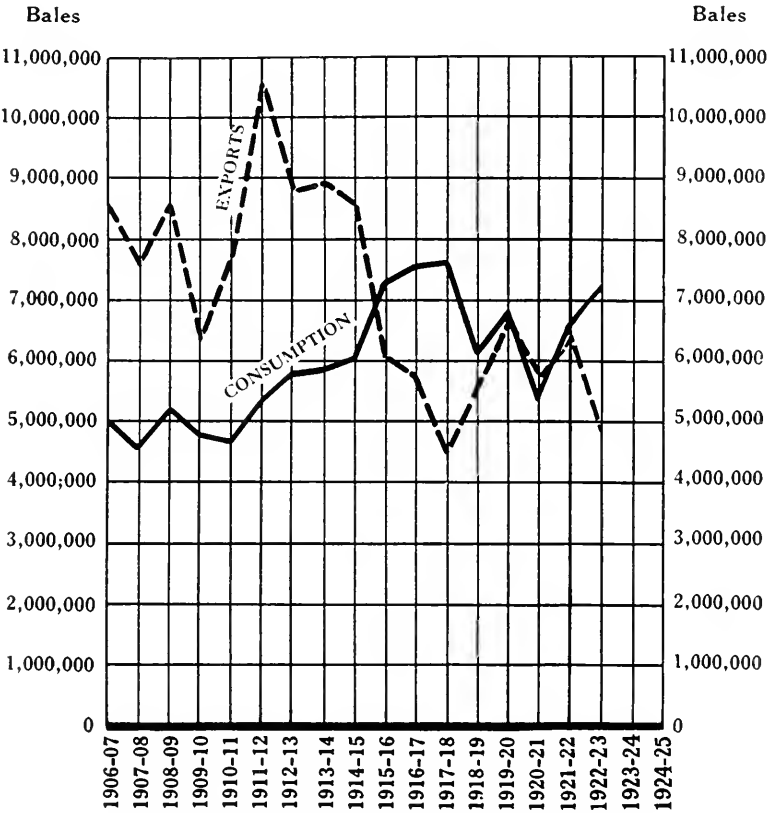
# Brazilian Exports of Raw Cotton

[Bales of 478 pounds net]

Textile Division, Bureau of Foreign and Domestic Commerce

COUNTRY OF DESTINATION	Average, 1909-13	1913	1921
Great Britain . . . . .	63,646	132,120	45,708
France . . . . .	2,771	8,436	13,386
Italy . . . . .	6	—	1,301
Netherlands . . . . .	883	3,716	—
Belgium . . . . .	1,331	1,536	1,138
Germany . . . . .	2,332	4,340	6,900
Austria-Hungary . . . . .	204	159	—
Portugal . . . . .	7,517	14,157	14,499
Spain . . . . .	491	—	—
Russia (in Europe) . . . . .	49	207	—
United States . . . . .	73	367	3,485
Argentina . . . . .	46	—	—
Uruguay . . . . .	7	—	—
All others . . . . .	—	—	48
Total . . . . .	79,356	165,038	86,465

United States Consumption and Exports of Cotton and Linters



The above chart is based on the table on the following page.



# United States Production, Consumption, and Exports of Cotton and Linters

The statistics below are in running bales except that round bales are counted as half bales and foreign cotton in equivalent 500-pound bales. The years as given are the official cotton seasons. Through 1913-14 the seasons were from September 1 to August 31. Starting with 1914-15, they have been from August 1 to July 31.

Compiled by the United States Bureau of the Census

COTTON SEASON	Production	Consumption	Exports
1906-07 . . . . .	13,097,992	4,984,936	8,503,265
1907-08 . . . . .	11,527,833	4,539,090	7,573,349
1908-09 . . . . .	13,418,144	5,240,719	8,574,024
1909-10 . . . . .	10,350,978	4,798,953	6,339,028
1910-11 . . . . .	12,384,248	4,704,978	7,781,414
1911-12 . . . . .	16,068,936	5,367,583	10,681,758
1912-13 . . . . .	14,159,078	5,786,330	8,800,966
1913-14 . . . . .	14,290,320	5,884,733	8,914,839
1914-15 . . . . .	16,738,241	6,009,207	8,544,563
1915-16 . . . . .	12,012,813	7,278,529	6,191,110
1916-17 . . . . .	12,664,078	7,658,207	5,739,009
1917-18 . . . . .	12,344,664	7,685,329	4,476,124
1918-19 . . . . .	12,816,716	6,223,837	5,663,920
1919-20 . . . . .	11,920,625	6,762,207	6,598,347
1920-21 . . . . .	13,699,975	5,408,979	5,796,107
1921-22 . . . . .	8,360,153	6,548,853	6,316,121
1922-23 . . . . .	10,319,843	7,312,201	4,864,027

## United States Consumption of Cotton and Linters

[American cotton and linters in running bales. Foreign cotton in equivalent 500-pound bales]

From statistics compiled by United States Bureau of the Census

Period	Total Cotton (including Linters)	Total Cotton (excluding Linters)	American Cotton (excluding Linters)	Linters	Foreign Cotton	Egyptian	Peruvian	Chinese	Indian	Sea Island	American Egyptian
Month of—											
December, 1923	502,452	461,560	436,767	40,892	24,793	17,483	2,342	3,158	1,351	495	2,238
November, 1923	579,700	531,631	505,290	48,069	26,341	19,216	1,322	4,028	1,502	499	2,453
October, 1923	598,953	541,825	514,036	57,128	27,789	20,152	1,355	4,131	2,016	415	2,759
September, 1923	483,439	483,852	461,550	49,587	23,302	15,220	1,148	4,108	1,706	253	2,547
August, 1923	539,692	491,601	467,796	47,998	23,808	17,332	928	3,390	1,848	354	2,533
July, 1923	508,587	462,654	437,187	45,933	25,467	17,070	1,930	4,254	2,101	389	3,092
June, 1923	590,970	542,026	512,871	48,944	29,155	22,496	1,214	3,263	1,969	408	3,064
May, 1923	575,930	620,854	555,076	55,076	37,969	29,165	2,178	3,418	2,070	366	4,552
April, 1923	629,109	576,514	542,166	52,595	31,348	27,145	2,116	3,690	1,274	352	3,784
March, 1923	678,773	624,261	589,210	54,509	35,054	27,410	1,910	3,790	1,519	367	4,637
February, 1923	614,101	566,805	533,849	47,296	32,956	25,923	2,099	3,205	1,195	455	4,452
January, 1923	660,841	610,306	577,343	50,535	32,963	25,947	2,332	2,578	1,310	539	5,183
December, 1922	578,485	529,342	502,122	49,143	27,220	21,344	1,882	1,776	1,344	519	5,772
November, 1922	634,328	579,190	551,836	55,138	27,360	20,439	2,468	2,221	1,184	604	6,652
October, 1922	596,379	533,744	512,772	62,635	29,972	15,476	1,691	1,773	861	879	7,570
September, 1922	555,487	494,013	475,763	61,471	18,250	13,209	1,424	1,910	615	679	7,783
August, 1922	589,221	526,380	504,296	62,841	22,084	16,707	1,574	1,651	915	710	7,791
Season ending—											
July 31, 1923	7,312,201	6,666,092	6,322,294	646,109	343,798	262,331	22,818	34,529	16,357	6,297	65,235
July 31, 1922	6,548,853	5,909,820	5,612,993	639,033	296,827	226,330	34,776	22,479	8,832	8,967	49,359
July 31, 1921	5,108,979	4,892,672	4,676,891	516,307	215,781	139,196	12,752	32,071	8,500	18,667	16,771
July 31, 1920	6,762,207	6,419,734	6,002,993	342,473	416,741	323,124	36,977	42,065	8,252	42,971	45,807
July 31, 1919	6,223,857	5,765,936	5,589,829	457,901	176,116	126,087	9,128	33,803	4,681	51,183	
July 31, 1918	7,685,329	6,566,489	6,382,695	1,118,840	183,794	136,401	8,502	35,637	2,290	93,939	
July 31, 1917	7,658,207	6,788,505	6,470,244	869,702	318,261	259,160	12,800	42,612	2,176	94,291	
July 31, 1916	7,278,529	6,397,613	6,080,618	880,916	316,995	269,324	10,886	32,347	3,986	82,645	
July 31, 1915	6,009,207	5,597,362	5,375,305	411,815	222,057	181,211	10,529	26,501	3,816	79,394	
August 31, 1914	5,884,733	5,577,408	5,383,099	307,325	194,309	151,091	13,003	25,411	4,801	81,673	
August 31, 1913	5,786,330	5,483,321	5,250,392	303,099	232,929	201,269	10,311	18,867	2,412	54,778	
August 31, 1912	5,367,583	5,129,346	4,921,683	238,237	207,663	180,465	8,539	6,564	6,812	94,836	
August 31, 1911	4,704,978	4,498,417	4,322,987	206,561	175,430	147,192	8,903	Not compiled	9,793	64,237	
August 31, 1910	4,798,953	4,621,742	4,465,968	177,211	155,747	130,728	10,539		11,766	75,605	

Not available

## United States Cotton Consumption, by States <sup>1</sup>

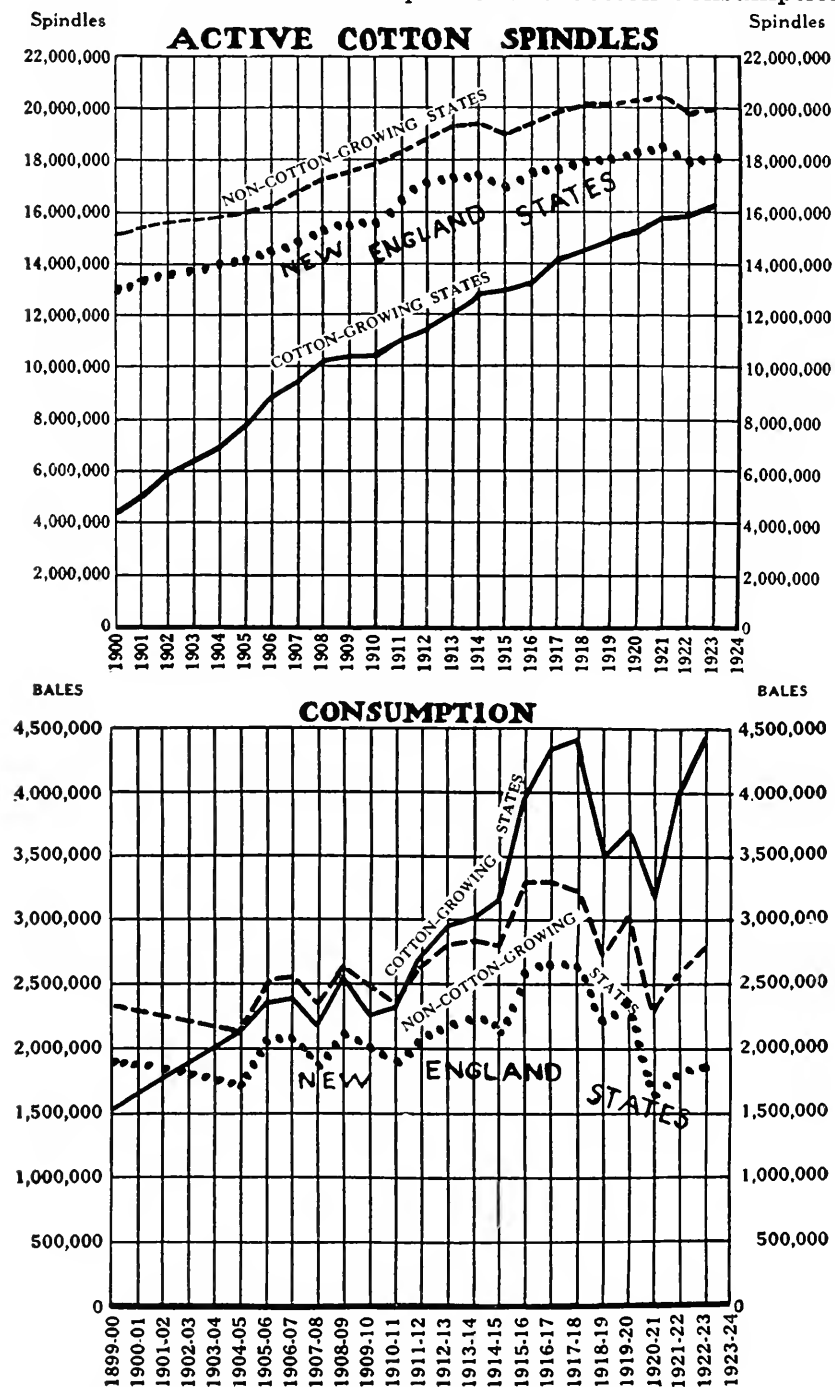
[In running bales, exclusive of linters]

From statistics compiled by United States Bureau of the Census

	1917-18	1918-19	1919-20	1920-21	1921-22	1922-23
New England States:						
Maine . . . . .	185,418	157,414	194,431	153,165	162,142	182,184
New Hampshire . . . . .	310,478	267,501	294,289	220,241	175,983	235,377
Vermont . . . . .	12,228	11,978	12,902	10,103	12,470	12,087
Massachusetts . . . . .	1,459,291	1,324,815	1,454,325	922,482	1,140,459	1,231,300
Rhode Island . . . . .	296,913	279,297	305,240	212,199	215,996	264,132
Connecticut . . . . .	138,192	124,026	135,939	95,407	115,631	124,500
Total New England States . . . . .	2,402,520	2,165,031	2,397,126	1,613,597	1,822,681	2,049,589
Other non-cotton-growing States:						
New York . . . . .	240,310	209,048	233,729	130,793	197,930	201,270
New Jersey . . . . .	49,518	38,007	37,075	31,364	38,365	41,866
Pennsylvania . . . . .	46,906	37,180	41,739	24,429	29,747	30,876
Maryland . . . . .	72,090	65,091	66,364	41,317	41,158	44,799
Indiana . . . . .	17,138	14,525	14,472	14,212	15,936	15,683
Illinois . . . . .	12,718	11,643	13,006	10,754	12,418	12,451
Others . . . . .	28,191	26,384	33,304	28,735	21,808	21,619
Total other non-cotton-growing States . . . . .	466,871	401,878	439,689	281,604	357,362	368,764
Cotton-growing States:						
Virginia . . . . .	97,457	94,264	112,747	105,352	116,530	121,272
North Carolina . . . . .	1,183,275	1,035,717	1,149,241	926,384	1,198,163	1,326,174
South Carolina . . . . .	888,218	764,794	843,924	771,560	918,725	1,035,557
Georgia . . . . .	854,078	702,676	800,901	614,079	781,870	974,662
Alabama . . . . .	374,792	326,773	367,468	309,646	377,548	414,880
Mississippi . . . . .	36,640	32,945	36,425	31,208	40,463	46,117
Tennessee . . . . .	104,842	92,052	108,373	74,689	107,731	123,052
Kentucky . . . . .	20,627	18,671	19,093	21,303	22,353	23,915
Louisiana . . . . .	37,106	34,147	39,543	39,327	40,704	45,135
Texas . . . . .	63,978	60,995	64,333	62,617	76,606	83,221
Others . . . . .	36,085	35,993	40,871	41,306	49,084	53,763
Total cotton-growing States . . . . .	3,697,098	3,199,027	3,582,919	2,997,471	3,729,777	4,247,748
Total United States . . . . .	6,566,489	5,765,936	6,419,734	4,892,672	5,909,820	6,666,092

<sup>1</sup> Statistics here given are for years ending July 31.

## United States Active Cotton Spindles and Cotton Consumption



The above charts are based on the table given on the following page.

# United States Cotton Production, Consumption, and Active Cotton Spindles

[Running bales, except those for production in 1850, 1860, and 1870, which are in equivalent 400-pound bales, and those for consumption from 1840 to 1870, and for foreign cotton, which are in equivalent 500-pound bales. Linters are included]

Bureau of the Census

YEAR	Cotton produced (Bales) <sup>1</sup>	COTTON CONSUMED (BALES)				ACTIVE COTTON SPINDLES			
		United States	Cotton-growing States	New England States	All Other States	United States	Cotton-growing States	New England States	All Other States
1923	10,319,843	7,312,201	4,489,150	1,866,495	956,556	36,260,091	16,310,360	18,053,716	1,895,925
1922	8,360,153	6,548,853	3,977,847	1,853,153	717,853	35,707,738	15,906,165	17,938,805	1,862,768
1921	13,699,975	5,408,979	3,151,954	1,644,834	612,191	36,047,367	15,708,988	18,387,789	1,950,590
1920	11,920,625	6,762,207	3,714,403	2,418,828	628,976	35,480,953	15,230,883	18,287,424	1,962,546
1919	12,816,716	6,223,837	3,491,008	2,231,574	501,255	34,930,934	14,846,239	18,065,857	2,018,838
1918	12,344,664	7,685,329	4,414,052	2,642,934	628,343	34,542,665	14,529,063	17,984,720	2,028,882
1917	12,664,078	7,658,207	4,335,007	2,654,138	669,062	33,888,835	14,155,758	17,760,968	1,972,109
1916	12,012,813	7,278,529	3,977,130	2,627,150	674,249	32,805,883	13,382,065	17,474,264	1,949,554
1915	16,738,241	6,009,207	3,193,353	2,197,220	618,634	31,964,235	12,955,712	17,100,615	1,907,908
1914	14,613,964	5,884,733	3,023,415	2,251,041	610,277	32,107,572	12,711,393	17,408,372	1,987,897
1913	14,090,863	5,786,230	2,960,518	2,210,813	614,999	31,519,766	12,227,226	17,311,451	1,981,089
1912	16,109,349	5,367,583	2,712,223	2,108,360	547,000	30,578,528	11,582,869	17,139,945	1,855,714
1911	11,965,962	4,704,978	2,328,487	1,911,092	465,399	29,522,597	11,084,623	16,510,981	1,926,993
1910	10,386,209	4,798,953	2,292,333	2,016,386	490,234	28,266,862	10,491,112	15,735,086	2,037,664
1909	13,432,131	5,240,719	2,553,797	2,144,448	542,474	28,018,305	10,429,200	15,591,851	1,997,254
1908	11,325,882	4,539,090	2,187,096	1,894,835	457,159	27,505,422	10,200,903	15,329,333	1,975,186
1907	13,305,265	4,984,936	2,410,593	2,073,355	500,588	26,375,191	9,527,964	14,912,517	1,934,710
1906	10,725,602	4,909,279	2,373,577	2,059,900	475,802	25,250,096	8,994,868	14,407,580	1,847,648
1905	13,697,310	4,278,980 <sup>2</sup>	2,140,151 <sup>2</sup>	1,753,282 <sup>2</sup>	385,547 <sup>2</sup>	23,687,495	7,631,331	14,202,971	1,833,193
1900	9,507,786	3,873,165	1,523,168	1,909,498	440,499	19,472,232	4,367,688	13,171,377	1,833,167
1890	7,472,511	2,518,409	538,895	1,502,177	477,337	14,384,180	1,570,288	10,934,297	1,879,595
1880	5,755,359	1,570,344 <sup>3</sup>	188,748 <sup>3</sup>	1,129,498 <sup>3</sup>	252,098 <sup>3</sup>	10,653,435 <sup>3</sup>	561,360 <sup>3</sup>	8,632,087 <sup>3</sup>	1,459,988 <sup>3</sup>
1870	3,011,996	796,616	68,702	551,250	176,664	7,132,415	327,871	5,498,308	1,306,236
1860	5,387,052	845,410	93,553	567,403	184,454	5,235,727	324,052	3,858,962	1,052,713
1850	2,469,093	575,506	78,140	430,603	66,763	3,998,022	264,571	2,958,536	774,915
1840	2,063,915	236,525	71,000	158,708	6,817	2,284,631	180,927	1,597,394	506,310

<sup>1</sup> Relates to crop of preceding year.

<sup>2</sup> Does not include foreign cotton.

<sup>3</sup> Cotton mills only.

## United States Imports of Cotton, by Countries of Production

[Equivalent 500-pound bales]

From statistics compiled by United States Department of Commerce

PERIOD	Egyptian	Peruvian	Chinese	Others	Total
Month of —					
December, 1923 . . . . .	28,391	5,677	370	1,163	35,601
November, 1923 . . . . .	11,488	4,339	124	613	16,564
October, 1923 . . . . .	3,654	3,338	124	499	7,615
September, 1923 . . . . .	4,257	1,296	108	947	6,608
August, 1923 . . . . .	1,075	479	386	1,480	3,420
July, 1923 . . . . .	3,929	592	702	1,133	6,356
June, 1923 . . . . .	6,580	430	3,479	2,878	13,367
May, 1923 . . . . .	14,034	723	3,012	5,824	23,593
April, 1923 . . . . .	16,991	1,681	14,102	4,497	37,271
March, 1923 . . . . .	37,006	3,655	6,970	5,588	53,219
February, 1923 . . . . .	48,325	2,778	10,739	4,487	66,329
January, 1923 . . . . .	89,626	1,677	7,025	6,887	105,215
December, 1922 . . . . .	52,191	2,737	2,310	11,309	68,547
November, 1922 . . . . .	30,399	3,966	1,156	14,030	49,551
October, 1922 . . . . .	16,776	1,461	—	8,579	26,816
September, 1922 . . . . .	2,261	776	264	1,711	5,012
August, 1922 . . . . .	11,217	710	480	2,271	14,678
Season ending —					
July 31, 1923 . . . . .	329,335	21,186	50,239	69,194	469,954
July 31, 1922 . . . . .	233,729	38,753	15,563	75,420	363,465
July 31, 1921 . . . . .	87,168	22,597	14,722	101,854	226,341
July 31, 1920 . . . . .	485,004	63,426	57,185	94,599	700,214
July 31, 1919 . . . . .	100,006	25,230	10,871	65,478	201,585
July 31, 1918 . . . . .	114,580	19,692	38,964	47,980	221,216
July 31, 1917 . . . . .	199,892	11,069	36,063	44,933	291,957
July 31, 1916 . . . . .	350,796	10,909	35,792	40,077	437,574
July 31, 1915 . . . . .	252,373	10,353	25,631	93,929	382,286
August 31, 1914 . . . . .	137,355	12,629	21,926	108,380	280,290
August 31, 1913 . . . . .	191,075	10,737	18,341	7,492	227,645

# United States Exports of Domestic Cotton and Linters, by Countries of Destination

[In equivalent 590-pound bales for years ending June 30]

Compiled by United States Department of Commerce

YEAR	Total Value	Total Bales	BALES EXPORTED TO —											All Other Countries		
			United Kingdom	Germany	France	Italy	Spain	Belgium	Russia <sup>1</sup>	Austria <sup>2</sup>	Netherlands	All Other Europe	Japan		Canada	Mexico
1912	8565,849,271	11,070,251	4,343,108	3,156,171	1,228,294	436,077	313,500	211,963	112,202	125,564	35,242	83,821	180,494	181,667	16,129	145,579
1913	547,357,195	9,124,591	3,716,898	2,443,886	1,074,987	590,823	317,954	226,967	74,907	113,182	14,537	55,376	306,779	152,015	20,977	15,303
1914	610,475,301	9,521,881	3,581,501	2,884,324	1,139,399	537,357	297,339	227,474	99,076	106,511	35,653	63,725	353,440	150,993	34,671	11,018
1915	376,217,972	8,807,157	3,919,749	294,191	692,699	1,127,400	464,594	5,057	82,125	455	544,035	898,096	128,806	182,790	39,727	127,520
1916	374,186,247	6,168,140	2,760,890	—	890,376	836,915	340,246	—	173,449	—	102,087	169,151	503,077	197,659	23,665	170,592
1917	543,074,690	6,176,162	2,895,423	—	1,055,749	687,158	394,093	—	49,189	—	62,161	184,717	539,892	187,201	5,298	124,281
1918	655,024,655	4,641,023	2,387,101	—	658,553	369,213	259,194	—	15,945	—	10,098	82,572	583,546	249,473	10,706	14,122
1919	873,576,669	5,525,893	2,494,069	—	773,744	557,549	281,343	72,652	310	55,386	57,949	203,949	809,313	293,015	1,707	14,967
1920	1,381,707,592	7,087,487	3,444,794	420,758	596,391	617,263	275,034	299,572	—	42,858	186,476	183,729	876,250	216,006	1,141	16,615
1921	600,185,629	5,622,777	1,786,984	1,152,424	590,630	558,015	290,990	166,018	—	5,862	98,754	155,056	571,892	169,166	70,602	53,381
1922	596,378,864	6,717,757	1,806,743	1,616,674	820,049	408,590	341,551	186,072	—	4,068	46,203	135,614	895,367	204,166	6,195	139,525
1923	658,982,855	5,253,464	1,403,068	945,647	704,199	572,068	250,244	185,769	7,274	2,958	75,618	167,646	679,159	217,052	15,492	27,330

<sup>1</sup> Includes Finland and Poland prior to 1919.

<sup>2</sup> Includes Czechoslovakia and Hungary prior to 1920.

## United States Exports of Cotton, by Ports

[In running bales, including linters]

Compiled by New York Cotton Exchange

	1912-13 <sup>1</sup>	1918-19	1919-20	1920-21	1921-22	1922-23
Galveston . . .	3,216,704	1,574,307	1,949,594	2,691,473	2,494,504	1,929,111
New Orleans . . .	1,350,327	1,291,487	1,348,677	1,034,310	1,320,016	814,017
Mobile . . .	143,148	86,945	122,192	72,366	122,619	59,099
Savannah . . .	836,187	718,683	1,178,994	560,698	692,375	293,496
Charleston . . .	228,478	14,642	143,008	54,615	176,021	89,732
Wilmington . . .	317,831	63,830	162,792	97,251	107,175	98,900
Norfolk . . .	72,692	59,093	169,807	111,664	238,027	174,320
Baltimore . . .	84,512	16,055	12,662	5,911	7,759	2,369
New York . . .	615,418	670,575	198,557	92,080	202,776	302,169
Boston . . .	159,589	37,314	20,619	13,450	16,704	13,552
Philadelphia . . .	62,222	23,289	13,908	3,605	4,279	1,977
Newport News . . .	291	—	—	—	—	—
Brunswick . . .	211,819	128,464	178,174	11,830	29,480	28,477
Pensacola . . .	125,099	—	18,743	9,993	10,821	9,245
Port Arthur . . .	138,642	—	—	2,198	—	—
Port Townsend . . .	104,506	617,731	334,014	176,567	90,959	9,632
San Pedro, etc. . .	—	—	13,068	70,461	61,186	18,869
San Francisco . . .	262,917	122,054	122,343	94,944	61,298	69,112
Portland, Ore. . .	4,046	122	31,687	3,625	1,150	—
Nogales . . .	325	230	485	1,950	—	200
Texas City, etc. . .	698,228	63,476	248,480	24,450	5,242	3,765
Eagle Pass . . .	—	—	70	37,171	651	3,534
El Paso . . .	—	—	15	3,252	47	2,850
Houston . . .	—	—	70,284	466,185	478,131	719,942
Portland, Me. . .	507	—	—	—	—	199,053
Jacksonville . . .	—	9,532	24,513	3,015	1,300	675
Georgetown . . .	—	—	—	—	—	—
Total . . .	8,633,488	5,497,829	6,362,686	5,643,064	6,122,520	4,844,096

<sup>1</sup> Year ending Aug. 31, 1913; other years end July 31.



# United States Exports of Cotton and Linters

[In running bales]

From statistics compiled by United States Bureau of the Census

Month of —	Period	Total Cotton, exclusive of Linters	Total Linters	Total Cotton and Linters	COTTON AND LINTERS EXPORTED TO —				
					United Kingdom	Germany	France	Italy	All Other Countries
December, 1923	.	833,921	11,660	845,581	395,885	109,514	84,269	71,495	184,418
November, 1923	.	764,905	5,097	770,002	282,411	111,124	103,547	71,765	205,155
October, 1923	.	777,784	3,938	781,722	213,651	152,529	115,434	86,694	213,411
September, 1923	.	685,693	3,742	689,435	245,023	132,116	98,674	68,331	145,288
August, 1923	.	240,500	3,825	244,325	46,379	70,209	54,549	21,050	52,228
July, 1923	.	167,808	3,661	171,469	12,327	82,218	18,234	15,703	42,987
June, 1923	.	212,949	1,902	214,851	33,477	49,777	33,620	27,248	70,729
May, 1923	.	157,550	2,818	160,368	10,947	40,392	17,360	12,138	79,531
April, 1923	.	257,215	2,769	259,984	9,722	76,089	31,750	40,059	102,364
March, 1923	.	309,863	8,317	318,210	65,712	56,047	26,260	33,381	136,162
February, 1923	.	354,732	4,925	359,657	106,755	60,047	20,458	36,189	136,208
January, 1923	.	470,619	2,817	473,436	158,024	74,865	50,324	59,752	152,533
December, 1922	.	605,408	2,445	607,853	174,737	105,517	80,879	55,787	181,933
November, 1922	.	855,510	2,827	858,337	265,247	129,974	149,813	83,992	229,311
October, 1922	.	794,129	4,535	798,664	235,827	140,143	120,513	71,379	230,802
September, 1922	.	365,488	2,902	368,390	148,874	62,873	39,963	34,162	82,518
August, 1922	.	268,318	4,490	272,808	65,903	56,416	43,404	26,921	80,161
Season ending —									
July 31, 1923	.	4,822,589	41,438	4,864,027	1,287,552	934,358	644,578	496,636	1,503,903
July 31, 1922	.	6,184,326	132,295	6,316,621	1,708,965	1,440,747	708,965	509,713	1,829,068
July 31, 1921	.	5,744,698	51,409	5,796,107	1,748,752	1,306,226	605,550	508,274	1,627,305
July 31, 1920	.	6,545,326	53,021	6,598,347	3,009,341	443,179	576,228	579,159	1,930,440
July 31, 1919	.	5,592,386	71,534	5,663,920	2,635,198	—	734,739	588,373	1,705,610
July 31, 1918	.	4,288,420	187,704	4,476,124	2,276,543	—	615,995	373,812	1,299,774
July 31, 1917	.	5,299,519	439,490	5,739,009	2,682,170	—	994,085	643,575	1,419,181
July 31, 1916	.	5,895,672	295,438	6,191,110	2,859,162	—	921,932	788,905	1,621,111
July 31, 1915	.	8,322,688	221,875	8,544,563	3,771,646	242,661	682,630	1,110,541	2,737,085
August 31, 1914	.	8,654,958	259,881	8,914,839	3,384,707	2,713,107	1,033,599	503,158	1,280,268
August 31, 1913	.	Not separately compiled	Not separately compiled	8,800,966	3,559,258	2,404,397	1,022,642	496,499	1,318,170

## World's Takings of American Cotton during Past Five Seasons

[In thousands of running bales. Linters included]

New York Cotton Exchange Statistics

WEEK ENDING —		1918-19		1919-20		1920-21		1921-22		1922-23	
		Week	Season	Week	Season	Week	Season	Week	Season	Week	Season
		56 <sup>1</sup>	56	10 <sup>2</sup>	10	—	—	—	—	—	—
August	4	102	159	173	215 <sup>3</sup>	152	152	181	181	154	154
	11	119	277 <sup>3</sup>	137	351	167	319	210	391	199	353
	18	112	379 <sup>3</sup>	147	499	179	497	233	624	184	537
	25	147	460 <sup>3</sup>	137	635	94	591	218	841	143	680
September	1	128	588 <sup>3</sup>	160	795	136	727	283	1,124	201	881
	8	149	737	158	954	139	866	217	1,340	191	1,072
	15	170	926 <sup>3</sup>	171	1,125	123	989	243	1,583	243	1,315
	22	164	1,089	185	1,310	156	1,145	215	1,798	214	1,529
	29	186	1,276 <sup>3</sup>	223	1,532	155	1,300	257	2,055	238	1,767
October	6	205	1,481	214	1,746	162	1,462	311	2,366	297	2,064
	13	232	1,726 <sup>3</sup>	221	1,967	157	1,619	341	2,707	293	2,358
	20	242	1,967	234	2,201 <sup>3</sup>	173	1,792	408	3,115	405	2,763
	27	263	2,157 <sup>3</sup>	286	2,487	258	2,050	373	3,487	326	3,088
November	3	261	2,418	292	2,779	200	2,250	366	3,853	372	3,461
	10	306	2,723	323	3,102	231	2,481	339	4,192	405	3,866
	17	301	3,047 <sup>3</sup>	347	3,449	248	2,729	361	4,553	408	4,274
	24	324	3,341 <sup>3</sup>	411	3,859	260	2,988	278	4,831	399	4,673
December	1	322	3,648 <sup>3</sup>	429	4,288	225	3,213	325	5,156	325	4,998
	8	292	3,940	392	4,681	193	3,406	287	5,443	389	5,387
	15	280	4,273	482	5,162	176	3,582	263	5,705	348	5,735
	22	303	4,576	344	5,506	214	3,796	251	5,957	318	6,053
	29	354	4,930	381	5,897 <sup>3</sup>	252	4,048	204	6,161	296	6,349
January	5	329	5,261 <sup>3</sup>	463	6,380 <sup>3</sup>	206	4,255	258	6,419	352	6,701
	12	283	5,494 <sup>3</sup>	375	6,695 <sup>3</sup>	244	4,498	210	6,629	269	6,970
	19	280	5,729 <sup>3</sup>	386	7,081	270	4,769	284	6,913	311	7,281
	26	253	5,981	289	7,370	236	5,005	238	7,151	250	7,531
February	2	211	6,198	229	7,552 <sup>3</sup>	310	5,315	260	7,411	261	7,792
	9	190	6,388	265	7,778 <sup>3</sup>	259	5,574	213	7,624	259	8,051
	16	183	6,666	266	8,043 <sup>3</sup>	273	5,846	218	7,842	270	8,321
	23	231	6,877 <sup>3</sup>	263	8,321 <sup>3</sup>	202	6,049	190	8,032	246	8,567
March	2	182	7,059	291	8,612 <sup>3</sup>	190	6,238	268	8,299	250	8,818
	9	225	7,284	294	8,906	224	6,462	185	8,484	217	9,035
	16	162	7,441 <sup>3</sup>	245	9,120 <sup>3</sup>	218	6,680	269	8,753	220	9,255
	23	172	7,613 <sup>3</sup>	212	9,332	241	6,921	214	8,966	236	9,491
	30	139	7,718 <sup>3</sup>	160	9,493	158	7,079	224	9,190	216	9,707
April	6	161	7,879	238	9,698 <sup>3</sup>	214	7,293	178	9,368	227	9,934
	13	143	8,038 <sup>3</sup>	188	9,869 <sup>3</sup>	152	7,445	183	9,551	168	10,102
	20	116	8,154	218	10,087	175	7,620	177	9,728	181	10,283
	27	160	8,307	225	10,312	162	7,782	233	9,961	155	10,438
May	4	169	8,476	195	10,418 <sup>3</sup>	183	7,965	234	10,195	158	10,596
	11	149	8,625	196	10,558 <sup>3</sup>	184	8,149	228	10,423	158	10,754
	18	147	8,772	168	10,727	193	8,342	243	10,666	151	10,905
	25	192	8,964	202	10,932 <sup>3</sup>	237	8,580	220	10,886	137	11,042
June	1	170	9,135	190	11,121	172	8,751	213	11,099	141	11,183
	8	126	9,260	172	11,293	206	8,958	193	11,292	149	11,332
	15	154	9,405 <sup>3</sup>	166	11,462 <sup>3</sup>	149	9,107	250	11,542	117	11,449
	22	167	9,572	168	11,630	172	9,279	213	11,755	124	11,573
	29	166	9,738	177	11,807	198	9,477	221	11,976	135	11,708
July	6	137	9,875	205	11,961 <sup>3</sup>	185	9,662	211	12,187	103	11,811
	13	137	10,013	164	12,125	210	9,873	197	12,384	109	11,920
	20	133	10,146	138	12,266 <sup>3</sup>	200	10,073	220	12,604	96	12,016
	27	97	10,224 <sup>3</sup>	162	12,364 <sup>3</sup>	195	10,268	190	12,794	106	12,122
	31	—	10,224	29	12,567 <sup>3</sup>	54	10,323	95	12,889	67	12,189

<sup>1</sup> Two days.<sup>2</sup> One day.<sup>3</sup> Corrected.

# American (including Canadian) Takings of American Cotton during Past Five Seasons

[In thousands of running bales. Linters included]

New York Cotton Exchange Statistics

WEEK ENDING —	1918-19		1919-20		1920-21		1921-22		1922-23		
	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season	
		18 <sup>1</sup>	18	5 <sup>2</sup>	5	—	—	—	—	—	—
August	4	63	82	57	93 <sup>3</sup>	32	32	73	73	60	60
	11	58	139	53	146	48	80	77	150	91	151
	18	58	197	57	203	49	130	81	230	68	219
	25	90	287	73	276	51	181	99	329	66	285
September	1	71	342 <sup>3</sup>	60	336	46	227	124	453	111	399
	8	86	427	63	398	48	275	117	570	99	495
	15	118	541 <sup>3</sup>	81	479	49	324	112	682	131	626
	22	110	650	87	566	53	377	114	796	123	749
	29	129	747 <sup>3</sup>	112	679	84	461	140	935	127	876
October	6	141	888	109	788	80	540	201	1,136	197	1,073
	13	142	1,026 <sup>3</sup>	133	921	97	638	211	1,347	204	1,277
	20	173	1,198	137	1,057 <sup>3</sup>	101	739	237	1,583	256	1,533
	27	182	1,380	181	1,239	138	877	235	1,817	268	1,801
November	3	199	1,579	194	1,433	143	1,020	228	2,046	233	2,034
	10	239	1,817	234	1,666	128	1,148	206	2,252	244	2,278
	17	216	2,015 <sup>3</sup>	229	1,896	133	1,281	188	2,439	258	2,536
	24	222	2,237	290	2,186	129	1,410	165	2,604	259	2,795
December	1	230	2,461 <sup>3</sup>	302	2,488	104	1,514	170	2,773	228	3,023
	8	221	2,681	277	2,765	97	1,611	144	2,917	249	3,272
	15	231	2,893 <sup>3</sup>	278	3,044	92	1,703	131	3,049	218	3,490
	22	229	3,121	260	3,303	109	1,812	119	3,167	195	3,685
	29	227	3,349	265	3,566 <sup>3</sup>	100	1,912	118	3,285	173	3,858
January	5	220	3,570	272	3,821	107	2,019	128	3,413	197	4,055
	12	201	3,771	238	4,059	110	2,129	127	3,540	202	4,257
	19	168	3,939	220	4,279	114	2,244	120	3,660	169	4,426
	26	157	4,095	138	4,417	114	2,358	121	3,782	141	4,567
February	2	147	4,242	113	4,531	140	2,498	128	3,910	125	4,692
	9	123	4,366	115	4,645	129	2,627	119	4,029	116	4,808
	16	107	4,471 <sup>3</sup>	106	4,751	138	2,765	101	4,130	144	4,952
	23	112	4,583	104	4,864	119	2,884	103	4,234	133	5,085
March	2	91	4,675	99	4,962	108	2,992	112	4,346	121	5,206
	9	91	4,766	103	5,065	113	3,105	108	4,454	115	5,321
	16	52	4,793 <sup>3</sup>	71	5,136	96	3,201	103	4,557	99	5,420
	23	57	4,850	58	5,194	108	3,309	87	4,645	99	5,519
	30	48	4,898	46	5,240	84	3,393	101	4,746	98	5,617
April	6	52	4,949	78	5,304	83	3,476	85	4,831	107	5,724
	13	37	4,986	32	5,326	78	3,554	81	4,912	81	5,805
	20	49	5,036	33	5,376	86	3,640	82	4,994	95	5,900
	27	48	5,083	35	5,411	85	3,725	75	5,069	90	5,990
May	4	49	5,132	57	5,405	109	3,834	132	5,201	109	6,099
	11	47	5,179	58	5,463	107	3,941	110	5,311	94	6,193
	18	54	5,232	49	5,513	104	4,045	110	5,421	68	6,261
	25	55	5,287	60	5,564	114	4,159	110	5,531	60	6,321
June	1	60	5,401 <sup>3</sup>	60	5,621	97	4,256	87	5,618	51	6,372
	8	55	5,456	44	5,665	98	4,354	87	5,705	51	6,423
	15	44	5,367 <sup>3</sup>	47	5,705	98	4,453	81	5,786	57	6,480
	22	43	5,410	61	5,766	95	4,548	82	5,868	61	6,541
	29	49	5,459	83	5,844	83	4,631	90	5,958	50	6,591
July	6	53	5,511	54	5,934	69	4,700	74	6,032	58	6,649
	13	38	5,549	64	5,993	67	4,767	75	6,107	53	6,702
	20	45	5,594	60	6,050	71	4,838	80	6,187	52	6,754
	27	35	5,600 <sup>3</sup>	61	6,086	76	4,914	56	6,243	52	6,806
	31	—	5,600	27	6,353	—	4,937	55	6,298	12	6,818

<sup>1</sup> Two days.

<sup>2</sup> One day.

<sup>3</sup> Corrected.

# Movement of American Crop into Sight during Past Five Seasons

[In thousands of running bales. Linters included]

New York Cotton Exchange Statistics

WEEK ENDING —		1918-19		1919-20		1920-21		1921-22		1922-23	
		Week	Season	Week	Season	Week	Season	Week	Season	Week	Season
August	4	13 <sup>1</sup>	13	12 <sup>2</sup>	12	—	—	—	—	—	—
	11	47	60	66	109 <sup>3</sup>	76	76	92	92	51	51
	18	66	127	65	174	37	114	116	208	96	147
	25	75	155 <sup>3</sup>	65	239	66	180	132	341	93	240
September	1	132	287	60	300	79	259	141	482	115	355
	8	148	435	63	363	92	351	188	558	186	541
	15	205	627 <sup>3</sup>	106	469	112	463	212	882	251	792
	22	272	902 <sup>3</sup>	145	590 <sup>4</sup>	153	616	246	1,128	325	1,117
October	6	316	1,213 <sup>3</sup>	195	786	205	821	335	1,463	440	1,557
	13	319	1,524 <sup>2</sup>	273	1,059	288	1,110	420	1,883	508	2,065
	20	347	1,871	342	1,400	302	1,411	500	2,383	598	2,663
	27	354	2,230 <sup>3</sup>	417	1,818	350	1,762	520	2,903	596	3,259
November	3	401	2,631	391	2,232 <sup>3</sup>	421	2,183	483	3,385	671	3,930
	10	372	3,003	503	2,735	436	2,619	463	3,848	626	4,556
	17	376	3,379	530	3,266	455	3,074	448	4,296	608	5,164
	24	395	3,774	544	3,810	427	3,501	393	4,689	546	5,710
December	1	386	4,183 <sup>3</sup>	513	4,323	391	3,892	388	5,072	522	6,232
	8	340	4,497 <sup>3</sup>	549	4,872	395	4,287	304	5,376	447	6,679
	15	338	4,798 <sup>3</sup>	529	5,401	379	4,666	305	5,681	361	7,040
	22	355	5,153	496	5,897	340	5,006	274	5,956	338	7,378
January	5	414	5,619 <sup>3</sup>	474	6,371	309	5,316	250	6,201	297	7,675
	12	398	6,017	401	6,791 <sup>3</sup>	301	5,617	264	6,464	250	7,925
	19	361	6,378	447	7,248 <sup>3</sup>	293	5,910	245	6,709	257	8,182
	26	337	6,716 <sup>3</sup>	450	7,718 <sup>3</sup>	250	6,160	184	6,893	231	8,413
February	2	334	7,127 <sup>3</sup>	423	8,170 <sup>3</sup>	236	6,396	184	7,078	224	8,637
	9	294	7,421	375	8,545	254	6,650	189	7,266	189	8,826
	16	243	7,687 <sup>3</sup>	268	8,813	254	6,904	160	7,427	170	8,995
	23	255	7,942	276	9,089	262	7,166	144	7,571	152	9,148
March	1	212	8,155	267	9,356	225	7,391	151	7,722	116	9,263
	8	188	8,448 <sup>3</sup>	260	9,616	226	7,616	143	7,865	105	9,369
	15	237	8,696 <sup>3</sup>	267	9,898 <sup>3</sup>	215	7,831	134	7,999	121	9,489
	22	160	8,856	203	10,101	171	8,002	141	8,141	123	9,612
April	5	192	9,048	191	10,292	192	8,195	138	8,278	129	9,741
	12	159	9,202 <sup>3</sup>	169	10,461	169	8,363	155	8,433	126	9,867
	19	160	9,362 <sup>3</sup>	167	10,628	151	8,515	149	8,582	125	9,992
	26	116	9,478	152	10,780	170	8,685	153	8,735	107	10,099
May	3	125	9,602	165	10,929 <sup>3</sup>	180	8,856	133	8,868	68	10,167
	10	106	9,708	112	11,069 <sup>3</sup>	144	8,999	141	9,009	62	10,229
	17	124	9,832	149	11,218	171	9,171	125	9,134	65	10,294
	24	121	9,954	86	11,304	165	9,336	124	9,258	77	10,371
June	1	129	10,083	72	11,340 <sup>3</sup>	204	9,540	157	9,415	71	10,442
	8	101	10,183	78	11,443 <sup>3</sup>	241	9,780	158	9,573	65	10,506
	15	107	10,290	71	11,514	211	9,991	143	9,716	50	10,556
	22	159	10,449	78	11,595 <sup>3</sup>	199	10,190	153	9,869	55	10,611
July	5	187	10,636	68	11,662	165	10,355	124	9,993	50	10,661
	12	164	10,800	53	11,715	170	10,525	126	10,119	50	10,711
	19	117	10,918 <sup>3</sup>	47	11,765 <sup>3</sup>	150	10,675	103	10,222	56	10,767
	26	113	11,031	49	11,814	171	10,846	109	10,331	59	10,827
August	2	115	11,146	56	11,869	131	10,977	100	10,431	59	10,886
	9	105	11,251	65	11,970 <sup>3</sup>	96	11,073	85	10,516	48	10,934
	16	106	11,357	46	12,016	98	11,171	74	10,590	42	10,976
	23	74	11,443 <sup>3</sup>	49	12,052 <sup>3</sup>	125	11,296	71	10,662	35	11,011
September	30	56	11,449 <sup>3</sup>	45	12,064 <sup>3</sup>	128	11,423	26	10,688	42	11,053
	31	—	11,449	7	12,298 <sup>3</sup>	74	11,497	57	10,745	39	11,091

<sup>1</sup> Two days.

<sup>2</sup> One day.

<sup>3</sup> Corrected.

<sup>4</sup> Adjusted.

# Monthly Movement of Cotton into Sight

[Running bales, linters included]

New York Cotton Exchange

	1920-21	1921-22	1922-23	1923-24
August . . . . .	292,562	558,369	444,343	557,796
September . . . . .	717,485	1,324,363	1,676,461	1,434,351
October . . . . .	1,665,269	2,100,838	2,698,384	2,535,783
November . . . . .	1,798,569	1,550,411	2,096,038	2,150,793
December . . . . .	1,436,086	1,204,903	1,274,932	1,679,413
January . . . . .	1,086,523	750,453	847,799	972,068
February . . . . .	881,812	577,339	519,094	521,410
March . . . . .	744,999	677,996	560,223	—
April . . . . .	742,015	542,227	287,827	—
May . . . . .	903,591	655,164	248,224	—
June . . . . .	664,791	498,604	238,422	—
July . . . . .	573,043	314,138	199,974	—
	11,506,745	10,754,805	11,091,721	—
Burned . . . . .	9,491 <sup>1</sup>	10,000 <sup>1</sup>	564 <sup>1</sup>	—
Total into sight . . . . .	11,497,254 <sup>2</sup>	10,744,805	11,091,157	—
Add . . . . .		751,626 <sup>3</sup>	91,240 <sup>3</sup>	—
Deduct . . . . .	321,845			—
Total crop . . . . .	11,175,409	11,496,431	11,182,397	—

<sup>1</sup> Burned at interior towns.

<sup>2</sup> Excess of stock at interior towns over previous year.

<sup>3</sup> Decrease of stock at interior towns under previous year.

## Growth of the Cotton Manufacturing Industry of the United States

	1889	1899	1904	1909	1914	1919	1921
Invested capital . . . . .	\$351,920,843	\$407,240,157	\$613,110,655	\$823,237,529	\$899,764,682	\$1,914,919,506	Not collected
Number of active producing spindles . . . . .	14,188,403	19,050,952	23,193,143	27,425,008	30,915,489	33,795,681	36,047,307 <sup>1</sup>
Number of concerns . . . . .	905	1,005	1,154	1,324	1,328	1,496	1,527
Number of employees . . . . .	218,876	302,861	315,874	378,880	393,404	416,852	425,817
Value of product calendar year . . . . .	\$267,984,721	\$339,200,320	\$450,467,704	\$628,391,813	\$701,300,933	\$2,195,565,881	\$1,330,263,117
Consumption of raw cotton and linters (in 500-pound bales).	Cotton year, 1889-90, 2,518,409	Cotton year, 1899-1900, 3,687,253	Cotton year, 1904-05, 4,523,208	Cotton year, 1909-10, 4,759,364	Cotton year, 1914-15, 6,087,338	Cotton year, 1919-20, 6,807,817	Cotton year, 1920-21, 5,477,508
Value of total exports of cotton manufactures, year ending June 30.	\$10,212,614	\$23,566,914	\$22,403,713	\$31,878,566	\$51,467,233	\$232,206,566	\$240,359,362
Value of total imports of cotton manufactures, year ending June 30.	26,805,942	32,054,434	49,524,246	63,231,968	70,704,828	34,762,723	97,550,315

<sup>1</sup> Total active cotton-producing spindles whether in cotton manufacturing industry or not.

# Summary of the Cotton Manufactures Industry for New England, Census of Manufactures, 1921

Bureau of the Census, Department of Commerce

	Maine <sup>1</sup>	New Hampshire	Vermont	Massachusetts	Rhode Island	Connecticut	Total
Number of establishments . . . .	15	22	4	224	127	57	419
Persons engaged . . . .	13,431	23,469	1,147	110,297	34,054	16,284	198,682
Proprietors and firm members . . . .	—	11	—	28	69	8	116
Salaried employees . . . .	167	592	37	2,781	1,479	1,072	6,128
Wage earners (average number) . . . .	13,264	22,866	1,110	107,488	32,506	15,204	192,438
Salaries and wages . . . .	\$13,848,463	\$21,685,030	\$1,070,276	\$105,569,531	\$35,967,429	\$17,061,910	\$195,205,339
Salaries . . . .	583,264	1,462,544	110,637	8,095,077	3,637,841	2,624,271	16,513,631
Wages . . . .	13,264,899	20,222,486	959,639	97,474,451	32,329,588	14,440,639	178,691,705
Paid for contract work . . . .	592,436	7,544	—	412,989	613,697	354,924	2,011,590
Cost of materials . . . .	23,613,007	26,717,340	1,284,111	155,751,811	57,103,235	42,795,226	307,294,736
Value of product . . . .	41,928,154	51,705,730	2,708,233	317,601,894	114,227,091	65,962,666	594,133,768
Value added by manufacture <sup>2</sup> . . . .	18,285,147	24,988,390	1,424,122	161,850,083	57,123,856	23,167,440	286,839,038

<sup>1</sup> Excludes statistics for one establishment to avoid disclosure of its operations.

<sup>2</sup> Value of products less cost of materials.

# United States Production of the Principal Cotton Piece Goods; and Yarns for Sale, 1921, 1919, and 1914

Bureau of the Census, Department of Commerce

Quantity for leading States that can be shown separately without disclosing the operations of individual establishments.

	1921	1919	1914
	Square Yards	Square Yards	Square Yards
Woven goods (over 12 inches in width) . . . . .	6,723,557,000	6,317,398,000	6,813,541,000
Sheetings . . . . .	1,600,999,000	1,368,946,000	2,665,627,000
South Carolina . . . . .	552,384,046	472,867,617	— <sup>1</sup>
Georgia . . . . .	258,108,831	238,851,455	— <sup>1</sup>
North Carolina . . . . .	141,612,847	156,590,868	— <sup>1</sup>
Massachusetts . . . . .	137,893,022	81,367,563	— <sup>1</sup>
Print cloth . . . . .	1,157,680,000	997,485,000	— <sup>1</sup>
South Carolina . . . . .	557,114,622	450,997,849	— <sup>1</sup>
Massachusetts . . . . .	393,409,673	373,938,032	— <sup>1</sup>
North Carolina . . . . .	97,450,230	70,360,345	— <sup>1</sup>
Lawns, nainsooks, cambrics, and similar muslins . . . . .	392,203,000	417,893,000	— <sup>1</sup>
Massachusetts . . . . .	188,804,824	243,580,824	— <sup>1</sup>
Connecticut . . . . .	58,187,624	52,612,464	— <sup>1</sup>
Rhode Island . . . . .	53,672,221	65,681,875	— <sup>1</sup>
Ginghams . . . . .	536,609,000	368,308,000	489,661,000
Massachusetts . . . . .	137,880,098	102,297,902	129,379,233
North Carolina . . . . .	122,719,438	105,680,259	100,741,627
South Carolina . . . . .	37,379,682	36,447,592	25,698,766
Shirtings (not silk-striped) . . . . .	249,306,000	318,264,000	— <sup>1</sup>
Massachusetts . . . . .	74,369,085	92,952,726	— <sup>1</sup>
North Carolina . . . . .	56,014,065	63,223,540	— <sup>1</sup>
South Carolina . . . . .	54,278,007	42,097,575	— <sup>1</sup>
Drills . . . . .	191,715,000	314,822,000	289,970,000
South Carolina . . . . .	63,916,287	96,339,969	98,617,604
Georgia . . . . .	54,468,304	86,226,872	68,911,226
Alabama . . . . .	21,593,014	— <sup>2</sup>	— <sup>2</sup>
Twills and sateens . . . . .	384,636,000	424,478,000	392,109,000
Massachusetts . . . . .	90,166,148	116,915,845	129,409,523
Connecticut . . . . .	46,508,323	29,198,245	33,445,109
Georgia . . . . .	41,472,634	25,622,585	15,353,897
Denims . . . . .	168,127,000	166,698,000	— <sup>1</sup>
North Carolina . . . . .	71,516,582	70,366,740	— <sup>1</sup>
Georgia . . . . .	19,989,343	— <sup>2</sup>	— <sup>1</sup>
Massachusetts . . . . .	12,599,069	18,204,837	— <sup>1</sup>

<sup>1</sup> Not reported separately.<sup>2</sup> Involve individual operations.



# **United States Production of the Principal Cotton Piece Goods; and Yarns for Sale, 1921, 1919, and 1914 — (Concluded)**

Bureau of the Census, Department of Commerce

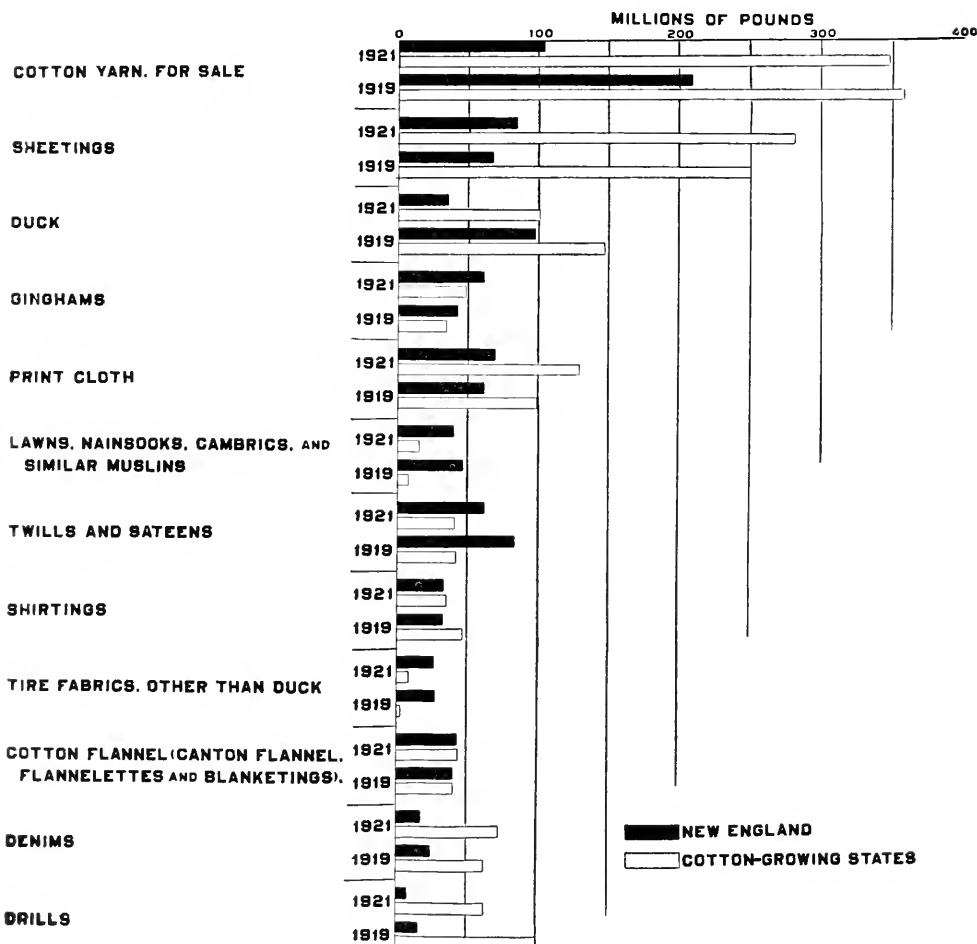
Quantity for leading States that can be shown separately without disclosing the operations of individual establishments.

	1921	1919	1914
	Square Yards	Square Yards	Square Yards
Cotton flannel (canton flannel, flannelettes, and blanketings) . . . . .	294,718,000	268,068,000	263,862,000
North Carolina . . . . .	108,845,957	98,436,715	90,152,119
Massachusetts . . . . .	84,790,910	78,640,678	75,155,157
New Hampshire . . . . .	50,122,152	59,592,244	49,650,233
Tire duck . . . . .	51,723,000	123,465,000	— <sup>1</sup>
Georgia . . . . .	12,992,271	11,685,777	— <sup>1</sup>
Massachusetts . . . . .	11,059,044	39,639,018	— <sup>1</sup>
Ounce duck . . . . .	97,033,000	178,540,000	251,368,000 <sup>2</sup>
Georgia . . . . .	31,343,847	56,970,661	— <sup>1</sup>
Texas . . . . .	28,605,027	31,838,893	— <sup>1</sup>
Alabama . . . . .	20,950,042	— <sup>3</sup>	— <sup>1</sup>
Numbered duck . . . . .	38,167,000	34,496,000	— <sup>1</sup>
Maryland . . . . .	7,926,282	— <sup>3</sup>	— <sup>1</sup>
Georgia . . . . .	6,346,624	8,537,758	— <sup>1</sup>
Tire fabrics, other than duck . . . . .	43,934,000	36,806,000	— <sup>1</sup>
Massachusetts . . . . .	18,215,138	18,647,503	— <sup>1</sup>
Cotton blanket . . . . .	91,520,000	96,621,000	— <sup>1</sup>
Massachusetts . . . . .	23,385,276	46,470,714	— <sup>1</sup>
	Pounds	Pounds	Pounds
Yarns, for sale . . . . .	484,219,000	618,034,000	497,987,000
North Carolina . . . . .	198,917,839	199,191,556	168,310,924
Massachusetts . . . . .	71,094,939	154,709,604	112,623,922
Georgia . . . . .	68,827,236	76,653,909	65,777,960

<sup>1</sup> Not reported separately. <sup>2</sup> Includes tire and numbered duck. <sup>3</sup> Involve individual operations.

# COTTON GOODS INDUSTRY

QUANTITY, IN POUNDS, OF THE PRINCIPAL PRODUCTS FOR  
NEW ENGLAND AND THE COTTON-GROWING STATES: 1921 AND 1919



## WOVEN GOODS. TOTAL POUNDS

UNITED STATES	1921	1,741,591,232	1919	1,814,545,042
NEW ENGLAND	1921	627,743,501	1919	715,584,501
COTTON STATES	1921	1,015,978,358	1919	980,926,071

Above chart prepared by Bureau of the Census.

# Principal Cotton Goods produced in the United States, Cotton-growing States, and New England, 1921 and 1919, in Terms of Quantity

Bureau of the Census, Department of Commerce

	UNITED STATES		COTTON-GROWING STATES <sup>1</sup>		NEW ENGLAND	
	1921	1919	1921	1919	1921	1919
Woven goods	Square Yards	Square Yards	Square Yards	Square Yards	Square Yards	Square Yards
Sheetings	5,214,329,596	5,015,331,184	3,027,897,643	2,798,786,087	2,038,986,752	2,016,213,791
Duck	1,600,998,979	1,368,919,386	1,195,389,693	1,047,305,819	352,571,097	271,009,722
Ginghams	186,922,903	336,500,457	135,642,803	194,771,652	38,037,703	101,339,887
Print cloth	536,608,509	368,307,601	225,526,731	173,604,126	298,056,988	190,509,328
Lawn, nainsook, cambric, and similar mus- lins	1,157,680,495	997,485,012	702,997,251	544,752,370	435,171,338	407,632,634
Twills, satteens, etc.	392,263,280	417,893,406	78,278,961	43,966,453	313,824,113	361,875,163 <sup>2</sup>
Shirtings	384,635,533	424,478,033	109,560,311	98,537,679	231,427,583	289,461,382 <sup>3</sup>
Cotton flannels (canton flannels, flannel- ettes and blankerings)	300,719,901	352,129,632	130,523,220	180,507,323	167,788,786	166,767,724
Denims	294,717,750	268,067,853	145,252,144	121,444,886	149,465,609	138,232,922 <sup>2</sup>
Drills	168,126,957	166,697,635	137,545,584	123,479,961	39,558,673	43,217,731
Cotton yarns, for sale	191,715,280	314,822,109	167,180,948	267,415,845	19,084,862	46,167,391
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
	484,248,907	618,034,098	347,875,291	359,003,634	104,393,406	208,964,523

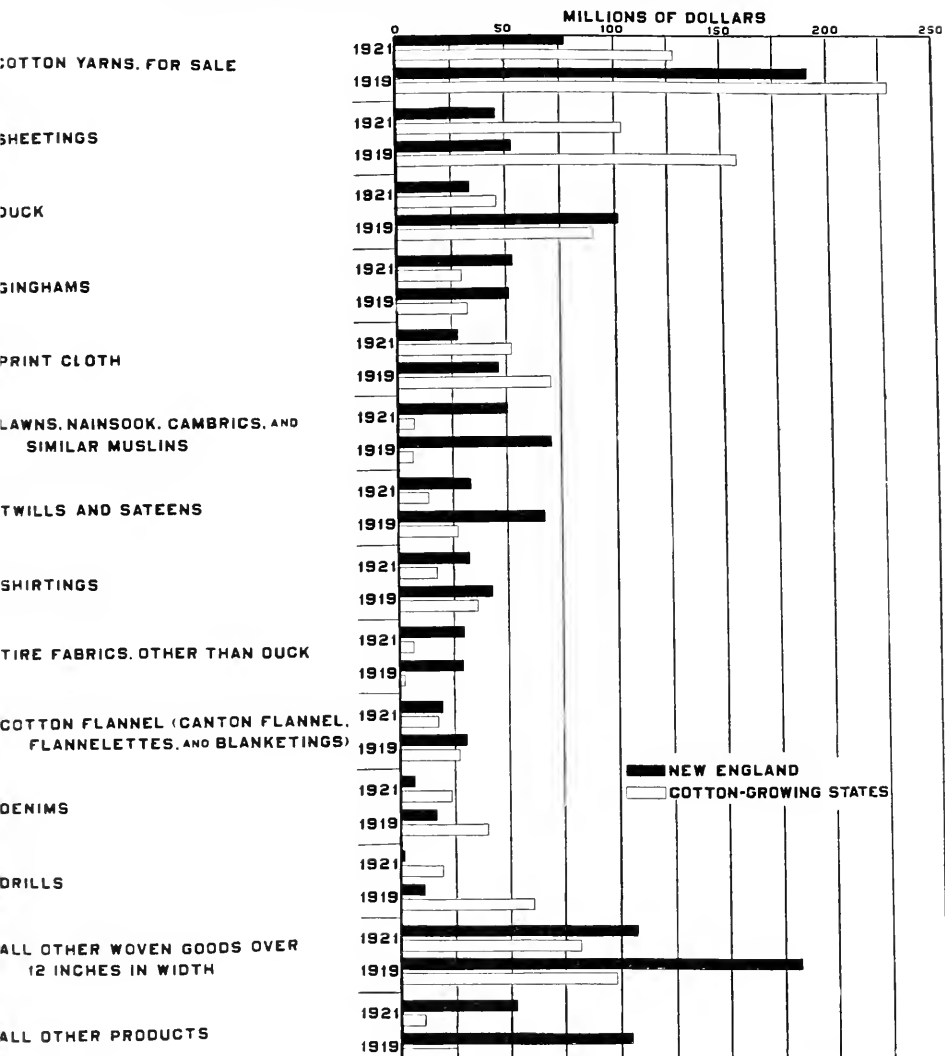
<sup>1</sup> Includes Alabama, Arkansas, California, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Texas, and Virginia.

<sup>2</sup> Excludes statistics for two establishments to avoid disclosing their operations.

<sup>3</sup> Excludes statistics for one establishment to avoid disclosing its operations.

# COTTON GOODS INDUSTRY

VALUE OF PRINCIPAL PRODUCTS FOR NEW ENGLAND  
AND COTTON-GROWING STATES: 1921 AND 1919



WOVEN GOODS, TOTAL VALUE

UNITED STATES	1921-\$956,731,860	1919-\$1,489,610,779
NEW ENGLAND	1921-\$444,435,688	1919-\$ 703,159,102
COTTON STATES	1921-\$422,341,753	1919-\$ 652,139,729

ALL PRODUCTS, TOTAL VALUE

UNITED STATES	1921-\$1,278,220,831	1919-\$2,125,272,193
NEW ENGLAND	1921-\$ 575,104,280	1919-\$1,000,273,149
COTTON STATES	1921-\$ 561,815,429	1919-\$ 906,805,817

Above chart prepared by Bureau of the Census.

# Principal Cotton Goods produced in the United States, Cotton-growing States, and New England, 1921 and 1919, in Terms of Value

Bureau of the Census, Department of Commerce

	UNITED STATES		COTTON-GROWING STATES <sup>1</sup>		NEW ENGLAND	
	1921	1919	1921	1919	1921	1919
Woven goods . . . . .	\$673,274,945	\$1,118,953,345	\$333,298,129	\$551,006,226	\$306,094,314	\$490,859,286
Sheetings . . . . .	158,216,314	220,089,704	103,793,846	157,789,101	45,870,433	52,966,997
Duck . . . . .	92,681,321	237,082,551	46,178,314	90,449,428	33,780,960	101,621,950
Ginghams . . . . .	87,983,968	85,070,745	29,944,348	32,566,574	53,242,991	51,373,654
Print cloth . . . . .	82,038,617	122,558,328	52,671,984	70,692,330	27,994,423	46,334,218
Lawns, nainsooks, cambric, and similar muslins . . . . .	58,408,313	79,384,890	7,805,712	7,084,796	50,501,560	70,318,534 <sup>2</sup>
Twill, sateens, etc. . . . .	51,834,924	101,056,691	13,993,289	27,338,840	33,453,605	66,724,057 <sup>3</sup>
Shirtings . . . . .	51,711,864	83,348,867	17,749,526	36,258,662	32,444,761	42,804,338
Cotton flannels (canton flannels, flannel-ettes and blankerings) . . . . .	37,690,967	60,152,426	17,857,495	27,496,411	19,833,472	30,767,175 <sup>2</sup>
Denims . . . . .	30,677,366	56,955,563	23,794,052	40,148,463	6,873,414	16,807,040
Drills . . . . .	22,031,291	73,253,640	19,509,563	61,181,621	2,098,695	11,141,323
Cotton yarns, for sale . . . . .	218,555,043	453,624,493	128,267,472	228,991,462	77,742,325	191,856,771

<sup>1</sup> Includes Alabama, Arkansas, California, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Texas, and Virginia.  
<sup>2</sup> Excludes statistics for two establishments to avoid disclosing their operations.  
<sup>3</sup> Excludes statistics for one establishment to avoid disclosing its operations

# United States Imports of Cotton Manufactures, by Classes of Goods, in Terms of Quantity

[Figures are for calendar years]

From statistics compiled by United States Department of Commerce

This table embraces only those classes of goods which can be expressed in units of quantity. It does not include, necessarily, other classes which cannot be so expressed. The table on imports expressed in terms of value includes all the imports of manufactures of cotton.

	1913	1914	1915	1916	1918	1919	1920	1921	1922	1923
Cotton thread and yarn:										
Thread and carded yarns, warps or warp yarn, on beams, in skeins, etc. (pounds)	6,436,643	6,650,146	6,041,854	9,930,434	3,436,481	3,861,908	10,029,645	3,140,102	5,426,987	5,269,354
Sewing thread, crocheted, darning and knitting cotton (100 yards)	-	-	-	-	-	-	83,334,972	45,966,524	54,803,837	42,326,041
Cloths:										
Unbleached (square yards)	3,666,363	3,728,821	4,072,746	11,533,599	6,587,809	19,732,441	50,408,631	16,335,557	23,028,859 <sup>1</sup>	90,000,000 <sup>2</sup>
Bleached (square yards)	13,626,419	17,491,108	13,639,472	14,534,086	5,938,830	9,434,881	23,923,795	22,582,343	17,863,670 <sup>1</sup>	14,000,000 <sup>2</sup>
Colored, dyed, printed and woven-figured (square yards)	20,270,786	41,052,024	25,047,452	-	-	-	-	-	-	112,000,000 <sup>2</sup>
Dyed in the piece (square yards)	-	-	-	21,409,857	11,806,779	11,577,432	38,746,021	39,927,187	41,894,470 <sup>1</sup>	-
Printed (square yards)	-	-	-	5,011,711	2,606,832	3,725,381	13,614,021	8,927,300	11,261,896 <sup>1</sup>	-
All other (square yards)	-	-	-	10,857,385	5,839,319	5,283,316	14,098,894	18,528,011	15,396,198 <sup>1</sup>	-
Total cloths (square yards)	46,563,568	62,272,013	42,759,670	66,406,638	32,839,569	49,753,451	140,788,365	106,330,508	109,648,093 <sup>1</sup>	216,000,000
Handkerchiefs or mufflers (dozens)	-	-	-	-	-	1,744,400	4,022,424	3,107,132	1,727,767 <sup>1</sup>	429,890 <sup>4</sup>
Laces, embroideries, etc., and articles made thereof (except wearing apparel):	-	-	-	-	-	-	-	-	-	-
Embroideries, including edgings, insertings, and galloons (yards)	-	-	-	-	-	7,586,004	24,889,980	29,885,458	24,012,100 <sup>1</sup>	-
Lace window curtains (square yards)	-	-	-	-	-	362,318	1,426,213	991,634	1,729,452	2,184,065 <sup>5</sup>
Laces and lace articles, including lace edgings, insertings, and galloons:										
Hand-made (yards)	-	-	-	-	-	-	-	-	-	-
All other (yards)	-	-	-	-	-	2,680,254	5,077,856	2,274,710	13,186,859 <sup>1</sup>	195,692 <sup>4</sup>
Pile fabrics and Terry-woven fabrics (square yards)	-	-	-	-	-	299,093,548	215,580,125	332,840,872	178,393,783 <sup>1</sup>	-
Tapestries and Jacquard figured upholstery goods (square yards)	5,071,153	3,481,603	2,996,729	4,237,528	357,693	433,335	1,038,064	307,582	121,785 <sup>1</sup>	370,067 <sup>4</sup>
Waste or flocks (pounds)	-	-	-	-	-	1,244,506	9,280,503	2,846,356	1,075,494 <sup>1</sup>	734,838 <sup>4</sup>
Wearing apparel:	38,195,858	19,439,522	16,003,487	29,915,740	1,267,336	2,124,663	9,090,707	4,861,682	28,339,261	77,022,332
Knit goods:										
Gloves (dozen pairs)	-	-	-	-	-	181,279	386,414	1,111,080	1,774,978	1,159,266
Hosiery (dozen pairs)	2,048,118	2,017,390	848,349	-	116,310	65,365	228,381	736,028	1,357,002	610,872
All other knit goods (dozens)	-	-	-	57,927	-	52,850	21,951	31,522	10,528	111,337

<sup>1</sup> January 1 to September 21, after which new tariff law is in effect.

<sup>2</sup> Estimated.

<sup>3</sup> Not separately classified under new tariff law.

<sup>4</sup> Pounds only reported after September 21, 1922.

<sup>5</sup> Quantity not available.

NOTE. — Where no figures are given for the earlier years (as for sewing thread, crocheted, darning and knitting cotton prior to 1919) the items were either not compiled or not separately classified in those years. If compiled, they were grouped with other items shown in the table. It should not be assumed that there were no imports of such items if no figures were given for these items separately.

# United States Imports of Cotton Manufactures, by Classes of Goods, in Terms of Value

[Figures are for calendar years]  
From statistics compiled by United States Department of Commerce

	1913	1914	1915	1916	1918	1919	1920	1921	1922	1923
Cotton thread and yarn: Thread and carded yarns, warps, or warp yarns, on breams, in skeins, etc.	\$3,824,455	\$4,035,320	\$3,315,350	\$7,378,667	\$6,338,487	\$7,031,356	\$25,418,166	\$3,752,332	\$6,038,543	\$5,666,886
Sewing thread, crocheting, darning and knit- ting cotton	-	-	-	-	-	-	3,545,891	1,980,146	2,753,007	3,188,622
Clothes:										
Unbleached	\$472,527	\$481,205	\$393,441	\$1,203,915	\$2,223,962	\$2,402,862	\$13,748,108	\$2,916,817	\$7,932,985	\$18,287,386
Bleached	2,604,226	2,956,142	2,023,766	2,446,987	1,860,297	3,318,675	9,168,582	5,830,112	6,068,135	3,696,394
Colored, dyed, printed, and woven-figured	5,845,461	7,518,017	4,219,123	-	-	-	-	-	25,071,330	25,204,253
Dyed in the piece	-	-	-	5,595,294	4,575,846	5,259,942	16,787,812	11,552,402	-	-
Printed	-	-	-	1,020,906	946,538	1,656,763	6,060,191	3,241,521	-	-
All other	-	-	-	1,727,730	2,011,288	2,026,661	5,989,051	5,885,307	-	-
Total	\$8,922,214	\$10,958,061	\$6,636,333	\$11,904,932	\$11,648,031	\$17,664,903	\$51,733,747	\$29,426,346	\$39,073,450	\$47,188,033
Handkerchiefs or mufflers	\$482,371	\$331,272	\$243,722	\$662,151	\$1,000,896	\$1,505,277	\$3,667,779	\$2,673,050	\$1,631,300	\$1,507,355
Laces, embroidery, etc., and articles made thereof (except wearing apparel):	-	-	-	-	-	\$95,949	\$152,073	\$245,455	\$118,633	\$60,726
Product of the Philippine Islands	-	-	-	\$501,725	637,753	637,753	2,501,302	1,493,312	1,259,805	586,904
Embroideries, including edgings, insert- ings, and galloons	\$11,629,992	\$7,699,830	\$7,188,860	\$1,947,927	142,911	194,520	1,097,963	567,171	767,786	722,878
Lace window curtains	750,362	691,657	423,368	571,416	-	-	-	-	-	-
Laces and lace articles, including lace ed- gings, insertings, and galloons:										
Hand-made	431,280	111,218	41,770	440,870	395,340	925,608	1,021,173	580,219	2,325,623	2,168,354
All other	17,431,810	15,374,595	10,229,430	10,452,410	4,918,662	7,702,408	12,003,254	8,978,117	5,686,169	9,259,362
Nets and nettings	1,308,759	1,327,870	2,777,470	1,914,419	1,914,419	2,469,628	1,916,091	1,815,438	1,405,691	1,139,555
Veils and veilings	43,031	28,721	8,727	22,039	8,803	23,831	69,681	37,585	-	-
All other	2,572,986	1,133,184	688,452	1,239,858	960,538	1,859,329	5,508,702	2,976,923	2,887,438	3,076,449
Total	\$31,231,253	\$26,378,288	\$19,753,031	\$20,451,984	\$8,872,428	\$13,909,116	\$24,300,149	\$16,703,583	\$14,451,585	\$17,014,228
Pile fabrics and Terry-woven fabrics	2,527,152	1,707,769	1,418,620	2,018,593	354,356	503,147	1,115,295	256,295	245,887	899,837
Tapestries and Jacquard-figured upholstery goods	-	-	-	-	-	-	-	-	-	-
Wearing apparel:										
Waste or flocks	1,759,803	972,157	686,535	1,471,951	94,123	426,550	802,542	309,905	2,674,371	6,727,755
Product of the Philippine Islands	-	-	-	771,895	1,291,462	2,796,634	7,349,452	5,154,258	2,353,312	393,735
Knit goods	3,531,908	5,815,733	2,861,565	-	-	2,706,284	8,129,238	4,819,238	7,731,283	5,731,283
Gloves	-	-	-	135,721	131,663	305,854	1,345,637	3,271,300	5,300,454	4,034,413
Hosiery	2,616,222	2,545,836	909,432	1,357,221	1,156,799	1,375,574	908,829	1,358,431	2,141,121	1,236,247
All other knit goods	915,686	1,452,123	636,174	3,271,894	1,576,799	3,707,778	1,850,504	189,501	73,087	370,623
All other wearing apparel	4,049,972	1,501,147	1,182,008	1,797,325	2,516,003	1,638,534	3,415,400	2,806,870	3,016,448	6,143,585
All other	6,030,414	8,612,263	6,075,127	7,303,819	7,632,509	4,122,079	10,177,006	5,072,428	6,111,646	4,496,023
Total	\$65,359,542	\$60,312,913	\$42,172,291	\$53,751,310	\$39,808,295	\$52,649,218	\$137,431,814	\$75,428,323	\$87,009,809	\$100,151,179

<sup>1</sup> Not separately classified under new tariff law effective September 22, 1922.

<sup>2</sup> "Includes veils and veilings."

<sup>3</sup> Not separately classified under new tariff law, included with "nets and nettings."

# United States Exports of Cotton Manufactures, by Classes of Goods, in Terms of Quantity

[Figures are for calendar years]

From statistics compiled by United States Department of Commerce

This table embraces only those classes of goods which can be expressed in units of quantity. It does not include, necessarily, other classes which cannot be so expressed. The table on exports expressed in terms of value includes all the exports of manufactures of cotton.

	1913	1914	1915	1917	1918	1919	1920	1921	1922 <sup>1</sup>	1923 <sup>1</sup>
<b>Cloths (running yards):</b>										
<b>Duck:</b>										
Unbleached	.	.	.	.	.	.	.	.	.	.
Bleached	.	.	.	.	.	.	.	.	.	.
Colored	.	.	.	.	.	.	.	.	.	.
<b>All other cloths:</b>										
Unbleached	245,916,185	125,650,257	209,998,108	125,319,773	73,436,891	142,885,303	138,343,302	218,907,315	177,172,182	103,286,881
Bleached	40,430,266	39,021,824	69,914,986	143,198,426	99,227,003	126,349,050	184,368,835	83,676,191	99,681,739	77,635,357
Colored	180,330,801	161,805,808	98,181,200	183,295,039	139,768,162	137,665,955	159,132,993	90,327,326	113,319,448	102,202,243
Printed	.	.	.	.	.	.	.	83,913,351	101,467,669	99,577,461
Dyed in the piece	.	.	.	105,419,979	133,174,126	156,051,800	178,489,420	83,913,351	101,467,669	99,577,461
Dyed in the yarn	.	.	.	195,037,632	90,484,726	105,394,039	138,821,514	67,801,267	84,911,809	72,662,000
Total cloths	166,677,252	326,177,889	518,338,302	704,621,592	544,174,574	683,045,326	818,750,954	551,512,942	587,492,532	464,293,759
<b>Mill waste (pounds)</b>										
Rags (except paper stock) (pounds)	77,059,287	58,750,931	41,789,174	62,259,332	46,868,332	57,317,920	57,877,150	39,002,394	58,572,181	55,986,852
Hosiery (dozen pairs)	10,325,703	10,747,940	5,810,034	4,075,111	5,024,029	6,182,533	6,187,037	6,780,907	8,089,668	15,252,057
Yarn (pounds)	.	.	.	.	5,574,343	9,477,338	11,573,655	2,508,258	4,792,004	5,159,750
	.	.	.	.	13,355,400	20,699,124	24,099,399	14,294,176	15,503,800	12,081,384

<sup>1</sup> Cloth exports are in square yards.

NOTE.—Where no figures are given for the earlier years (as for unbleached, bleached, and colored duck prior to 1917) the items were either not compiled or not separately classified in those years. If compiled, they were grouped with other items shown in the table. It should not be assumed that there were no exports of such items if no figures are given for these items separately.



## United States Exports of Cotton Manufactures, by Classes of Goods, in Terms of Value

[Figures are for calendar years]

From statistics compiled by United States Department of Commerce

	1913	1914	1915	1917	1918	1919	1920	1921	1922	1923
Blankets	-	-	-	-	\$2,498,163	\$3,551,511	\$5,196,387	\$900,808	\$960,214	\$970,258
Clothes:	-	-	-	-	-	-	-	-	-	-
Dress:	-	-	-	-	-	-	-	-	-	-
Unbleached	-	-	-	-	\$4,255,424	\$7,469,640	\$10,753,578	\$2,818,206	\$3,508,982	\$3,216,638
Bleached	-	-	-	-	1,002,157	3,037,108	2,892,720	3,993,373	475,947	475,947
Colored	-	-	-	-	471,781	718,083	882,682	262,836	238,532	372,185
All other clothes:	-	-	-	-	-	-	-	-	-	-
Unbleached	\$17,093,119	\$9,377,464	\$17,631,374	11,787,698	11,839,027	23,591,461	32,029,596	19,689,270	19,296,926	13,731,328
Bleached	3,186,118	3,256,848	4,822,465	17,661,781	19,090,986	26,213,748	50,841,463	11,702,965	13,871,473	12,287,691
Colored	11,978,215	11,001,287	5,646,294	18,559,148	21,628,277	22,205,903	38,584,777	10,575,603	14,802,468	15,196,072
Printed	-	-	3,360,508	15,160,989	30,073,042	40,665,903	58,854,710	15,505,740	18,111,287	19,679,792
Dyed in the piece	-	-	7,272,941	26,281,086	19,918,898	27,095,972	43,224,280	10,640,069	14,780,205	14,353,149
Dyed in the yarn	-	-	-	-	-	-	-	-	-	-
Total cloths	\$32,257,482	\$23,635,599	\$38,733,582	\$65,180,667	\$107,510,333	\$151,997,817	\$238,153,557	\$71,573,875	\$85,232,112	\$79,312,802
Laces and embroideries	-	-	-	-	-	-	-	-	-	-
Mill waste	198,402	264,294	382,443	1,614,290	1,569,322	1,731,675	1,629,409	611,506	359,634	319,136
Rags (except paper stock)	1,850,341	3,813,688	3,051,899	9,065,446	9,488,064	12,111,704	12,368,506	3,678,527	6,007,303	7,609,698
Thread, sewing, crochet, etc.	517,151	461,297	227,008	215,419	342,419	515,751	641,557	205,430	462,737	987,234
Wearing apparel:	-	-	-	-	2,821,776	4,367,762	4,371,617	2,065,328	2,034,732	2,065,520
Collars and cuffs	-	-	-	-	329,227	771,210	816,142	341,780	318,646	163,415
Corsets	-	-	-	-	1,923,078	2,880,858	3,583,767	1,695,555	1,924,036	1,745,581
Knit goods	1,882,445	6,423,715	16,879,857	1,552,161	13,258,471	26,882,566	37,879,665	6,232,108	9,221,834	10,535,183
Hosiery	2,685,231	-	-	15,068,889	2,897,486	8,602,263	14,067,839	3,602,493	6,185,980	5,025,008
Underwear	-	-	-	-	945,833	1,308,965	2,510,558	427,773	546,583	530,158
All other knit goods	6,172,376	6,438,521	16,321,950	10,521,324	6,181,308	10,092,218	17,724,523	4,628,456	3,893,055	6,138,407
All other wearing apparel	-	-	-	-	3,015,130	3,664,724	4,542,235	2,515,723	1,488,384	1,229,339
For men and boys	-	-	-	-	6,583,081	14,488,630	20,014,949	5,679,075	6,815,064	6,632,672
For women and children	745,913	909,034	3,610,912	-	8,846,694	13,488,630	20,014,949	5,679,075	6,815,064	6,632,672
Yarn	5,809,528	6,263,500	14,687,463	18,807,530	19,389,579	29,457,978	38,340,476	12,905,016	13,160,683	11,445,065
All other	-	-	-	-	-	-	-	-	-	-
Total manufactures of cotton	\$55,519,267	\$50,092,993	\$95,833,456	\$158,818,816	\$181,020,486	\$273,115,704	\$402,041,277	\$117,234,542	\$138,701,617	\$138,000,106

NOTE.—Where no figures are given for the earlier years (as for blankets for the years prior to 1918) the items were either not compiled or not separately classified in those years. If compiled, they were grouped with other items shown in the table. It should not be assumed that there were no exports of such items if no figures are given for these items separately.

Conversely figures for certain classes of goods (as for all other cloths, colored, after 1914) are discontinued when this classification is broken up into several sub-classifications, all other cloths, colored, being subdivided into printed, dyed in the piece, and dyed in the yarn.

# United States Imports of Cotton Manufactures during the Last Ten Years, by Countries from which imported

[Statistics are for years ending June 30 from 1913 to 1919, inclusive, and for calendar years thereafter]

Compiled by United States Department of Commerce

COUNTRIES	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Europe:										
United Kingdom	\$20,361,396	\$23,852,517	\$20,220,239	\$27,772,312	\$39,542,259	\$30,303,244	\$23,192,647	\$82,128,618	\$27,917,368	\$39,003,963
Germany	16,406,123	17,617,863	10,410,775	1,991,717	53,500	—	—	4,847,137	7,417,485	12,352,330
France	12,264,192	14,836,509	5,929,776	6,710,360	5,856,723	3,358,727	3,555,197	10,572,118	9,441,632	11,267,774
Switzerland	11,546,075	10,335,521	7,360,128	7,879,254	4,286,848	2,365,277	1,326,133	17,261,975	15,177,834	11,188,442
Belgium	465,001	416,811	220,702	28,342	9,695	1,431	621	861,740	424,198	692,459
Austria	600,780	432,380	195,331	20,344	—	—	—	—	—	89,856
Italy	337,895	338,273	421,409	741,448	1,526,695	588,030	246,191	1,441,069	800,992	613,800
Spain	88,779	99,501	115,840	72,272	90,595	68,017	23,754	60,055	67,940	55,748
Turkey (including Asiatic Turkey)	509,719	190,002	25,353	2,796	—	—	—	104,803	55,328	22,418
All other Europe	152,678	146,946	187,495	235,161	286,394	186,733	304,245	2,008,649	1,287,007	1,728,136
America:										
Canada	19,892	30,193	129,768	77,962	181,367	2,079,083	2,078,544	248,108	344,590	211,722
Mexico	21,932	25,587	35,088	34,649	90,814	15,250	11,035	454,352	78,365	22,146
All other America	10,619	4,766	13,227	6,337	7,796	16,063	3,037	12,134	8,854	20,088
Japan	1,029,086	1,007,133	1,156,104	1,861,382	3,844,581	4,280,957	1,363,512	7,062,060	3,731,293	4,157,448
China	56,174	45,235	28,767	61,861	340,694	769,279	456,128	2,118,254	3,038,915	2,846,280
British India	31,150	13,381	6,370	3,578	23,578	18,192	5,548	32,101	71,627	188,208
All other countries	34,132	18,343	18,751	12,092	37,145	70,298	2,176,131	7,769,274	5,567,067	2,608,991
Total	\$63,935,983	\$69,410,964	\$46,205,123	\$47,511,870	\$56,181,684	\$44,751,181	\$34,762,723	\$137,583,347	\$75,430,495	\$87,069,809

1 Included in "All other Europe."

2 Includes Hungary.

# United States Exports of Cotton Manufactures during the Last Ten Years, by Countries to which exported

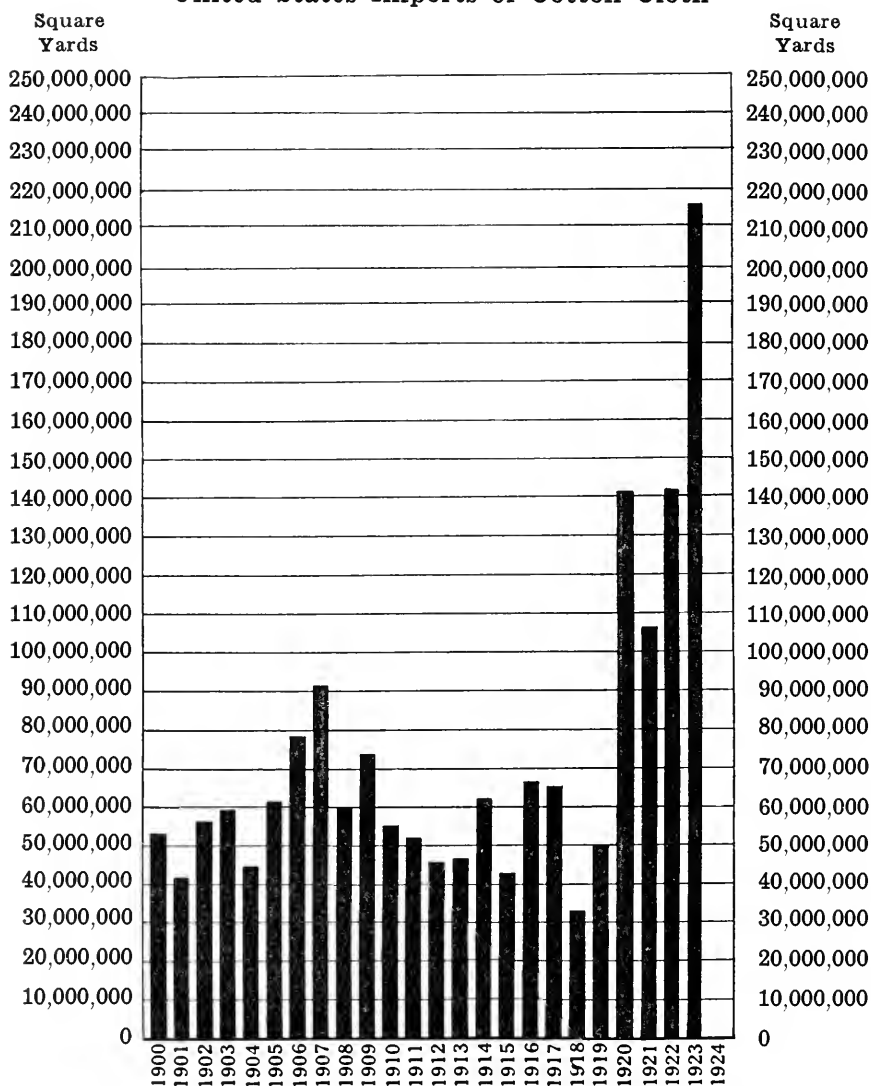
[Statistics are for years ending June 30 from 1913 to 1919, inclusive, and for calendar years thereafter]

Compiled by United States Department of Commerce

COUNTRIES	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
EUROPE:										
United Kingdom	\$4,782,758	\$1,300,298	\$23,604,368	\$26,700,477	\$10,775,950	\$10,070,789	\$12,796,195	\$25,900,099	\$6,884,979	\$11,351,079
Germany	1,304,519	1,654,308	2,560,834	4,891,950	11,011,886	18,606,003	38,907,913	1,961,236	1,522,910	1,419,384
All other Europe	1,889,399	2,257,655	6,287,823	11,537,916	9,507,287	4,877,986	10,123,223	31,491,875	11,533,970	7,004,752
AMERICA:										
Canada	10,536,412	9,559,177	9,771,888	18,274,627	28,261,480	27,981,121	30,555,383	40,526,138	18,207,778	20,540,062
Mexico	1,064,892	1,200,704	2,560,834	4,891,950	11,011,886	18,606,003	11,057,043	12,452,319	13,703,906	6,795,751
Central America	3,434,742	3,530,363	1,982,498	4,561,658	8,001,905	4,877,986	10,123,223	19,064,743	8,800,540	9,812,808
British West Indies (including Bermuda)	1,022,049	1,342,519	1,233,055	1,973,542	2,168,030	3,503,209	3,524,740	7,032,030	3,297,420	3,382,094
Cuba	2,903,295	2,832,602	4,225,431	7,741,071	10,631,027	17,728,667	16,819,119	73,364,132	6,744,018	11,461,303
Haiti	1,465,690	1,706,208	770,452	2,276,749	2,499,083	2,906,510	4,533,777	5,779,455	2,412,481	3,358,270
All other North America	1,138,534	919,824	2,131,500	1,581,558	3,231,716	5,068,253	3,270,006	11,828,026	2,116,574	3,122,472
Brazil	386,268	229,262	182,715	782,755	1,983,549	3,567,927	5,850,310	5,089,801	567,705	1,015,537
Chile	808,674	889,544	639,031	1,638,043	4,484,399	7,731,473	10,380,432	7,288,108	2,786,929	4,475,339
Colombia	1,453,774	849,433	846,753	2,007,192	5,791,316	5,735,123	3,351,121	25,708,682	2,190,974	5,765,011
Peru	198,331	216,169	128,301	675,086	2,581,311	2,728,782	2,175,630	6,128,972	1,099,481	1,957,994
Venezuela	376,314	413,096	413,293	2,575,406	1,012,670	1,012,670	1,482,637	10,303,187	544,331	882,633
All other South America	1,281,848	1,201,848	1,009,616	8,229,655	13,547,220	21,761,643	34,560,363	41,537,394	12,046,946	17,557,471
ASIA AND OCEANIA:										
China	5,796,984	6,188,192	1,261,601	953,677	681,044	1,217,295	2,051,883	9,201,386	2,576,539	2,248,349
British India	1,071,397	1,071,397	1,032,999	1,292,347	891,480	1,034,590	933,595	4,823,697	2,939,733	854,521
British Australasia	1,813,658	1,813,658	2,333,682	5,312,125	5,812,428	5,651,326	12,601,593	11,361,911	2,550,761	5,144,867
Aden	1,433,650	1,018,906	1,478,922	1,012,830	1,131,218	173,986	206,821	1,141,240	1,334,587	1,433,096
Philippine Islands	7,077,165	6,703,094	7,868,489	5,976,922	9,340,976	17,362,881	17,179,046	23,326,230	8,923,285	11,263,146
All other Asia and Oceania	771,210	677,668	454,099	777,438	1,625,716	1,747,806	4,832,686	12,068,056	2,068,763	1,728,391
AFRICA										
Total	\$53,743,977	\$51,467,233	\$71,685,259	\$112,463,235	\$136,299,842	\$169,378,223	\$232,206,566	\$402,041,277	\$117,231,542	\$128,701,617

† Included in "All other Europe."

## United States Imports of Cotton Cloth



The above chart is based on the table on the following page.

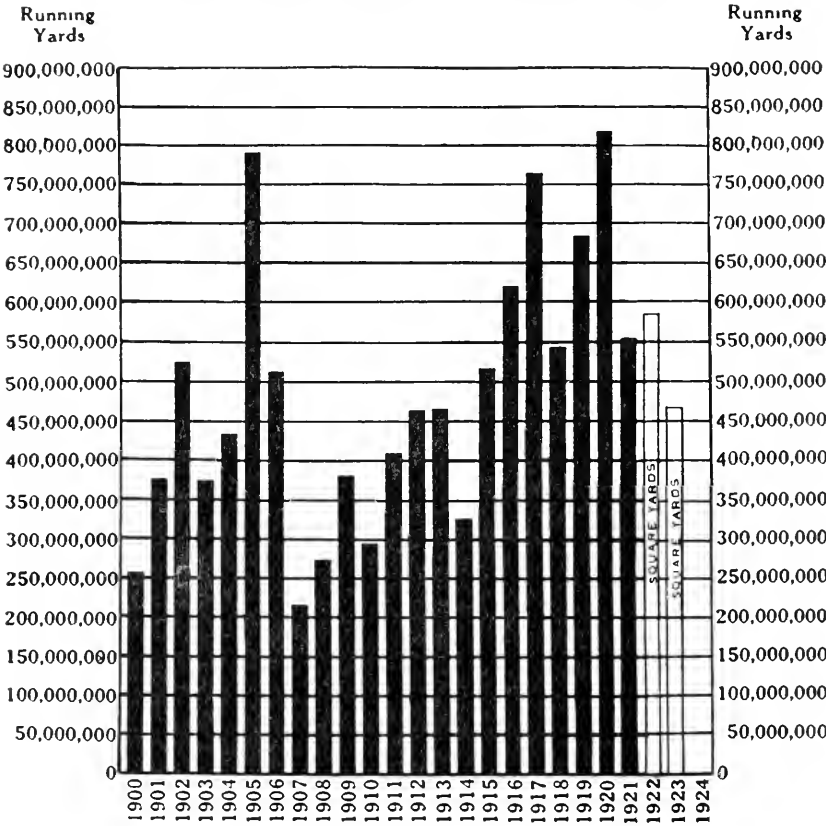
# United States Imports of Cotton Cloth during Calendar Years

From statistics compiled by the United States Department of Commerce

YEAR	Square Yards
1900	53,264,507
1901	41,891,885
1902	56,199,911
1903	59,250,082
1904	44,755,238
1905	61,381,256
1906	78,321,752
1907	91,613,881
1908	60,099,151
1909	73,803,398
1910	55,276,921
1911	52,031,130
1912	45,497,927
1913	46,563,568
1914	62,272,013
1915	42,759,670
1916	66,406,638
1917	65,296,802
1918	32,839,569
1919	49,753,481
1920	141,330,861
1921	106,308,379
1922	142,000,000 <sup>1</sup>
1923	216,000,000 <sup>1</sup>

<sup>1</sup> Estimated, as imports of cotton cloth were reported in pounds only from September 22, 1922, to March 31, 1923.

United States Exports of Cotton Cloth



The above chart is based on the table on the following page.

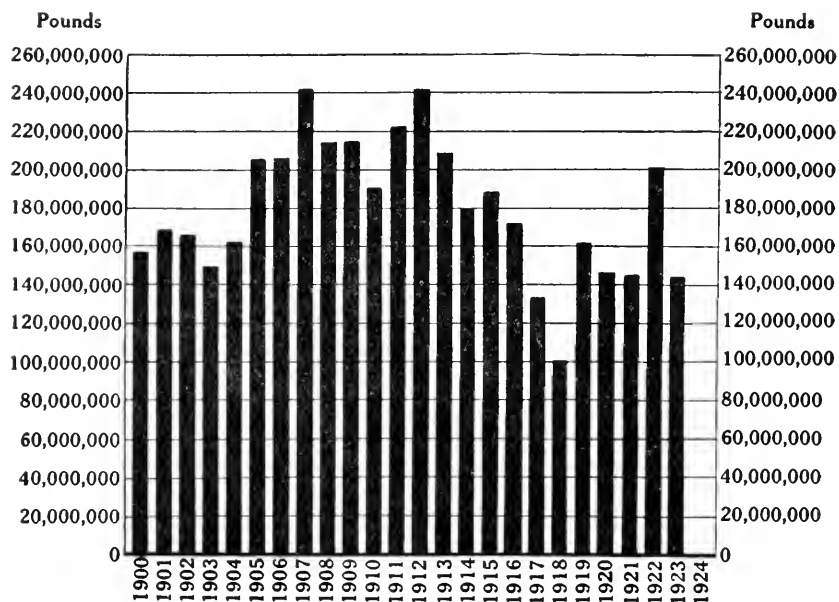
# United States Exports of Cotton Cloth during Calendar Years

From statistics compiled by the United States Department of Commerce

YEAR	Linear Yards
1900	257,910,508
1901	376,233,960
1902	525,495,309
1903	374,074,192
1904	434,989,686
1905	790,259,024
1906	512,229,720
1907	216,387,642
1908	272,242,179
1909	380,521,971
1910	295,736,336
1911	410,200,201
1912	464,253,126
1913	466,677,252
1914	326,477,889
1915	518,338,302
1916	620,255,896
1917	764,621,892
1918	544,174,574
1919	683,045,326
1920	818,750,954
1921	551,512,942
1922	587,492,532 <sup>1</sup>
1923	464,293,759 <sup>1</sup>

<sup>1</sup> Square Yards

## British Exports of Cotton Yarn



The above chart is based on the table on the following page.

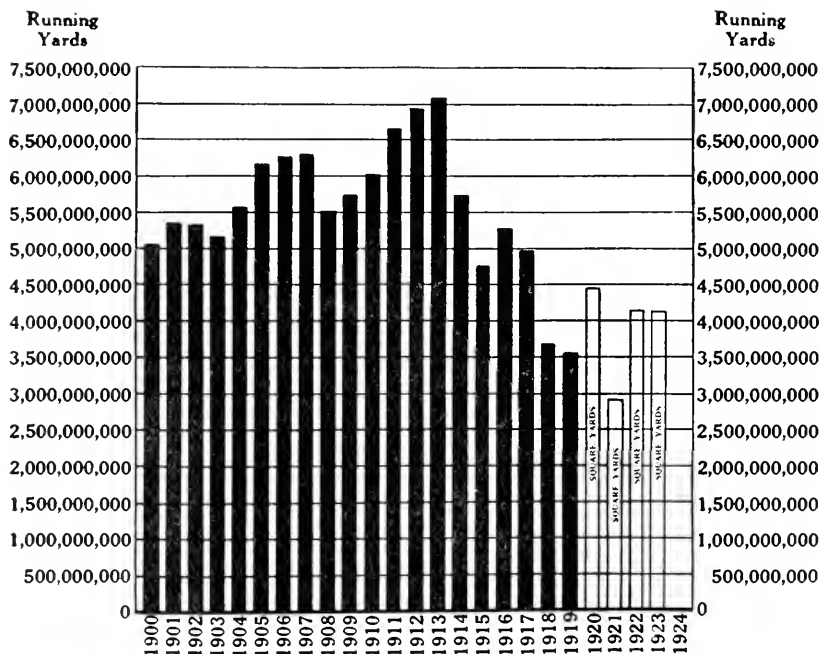


### British Exports of Cotton Yarn

From statistics compiled by the British Board of Trade

YEAR	Pounds
1900	158,272,900
1901	169,658,000
1902	166,360,900
1903	150,758,100
1904	163,901,400
1905	205,100,500
1906	207,378,700
1907	241,076,700
1908	214,762,200
1909	215,223,400
1910	191,629,100
1911	223,834,400
1912	243,850,400
1913	210,099,000
1914	178,496,800
1915	188,169,200
1916	172,170,600
1917	133,151,300
1918	101,711,400
1919	162,816,600
1920	147,432,400
1921	145,894,900
1922, January	14,806,200
1922, February	14,913,200
1922, March	18,750,700
1922, April	21,327,800
1922, May	20,767,300
1922, June	15,743,900
1922, July	19,852,300
1922, August	15,408,500
1922, September	16,794,000
1922, October	16,031,700
1922, November	15,113,600
1922, December	11,711,600
Total	201,953,000
1923, January	12,814,700
1923, February	10,881,600
1923, March	13,030,200
1923, April	10,895,400
1923, May	12,574,500
1923, June	10,029,300
1923, July	9,514,400
1923, August	12,802,800
1923, September	11,987,100
1923, October	14,733,500
1923, November	14,619,500
1923, December	11,136,500
Total	145,019,500

## British Exports of Cotton Cloth



The above chart is based on the table on the following page.

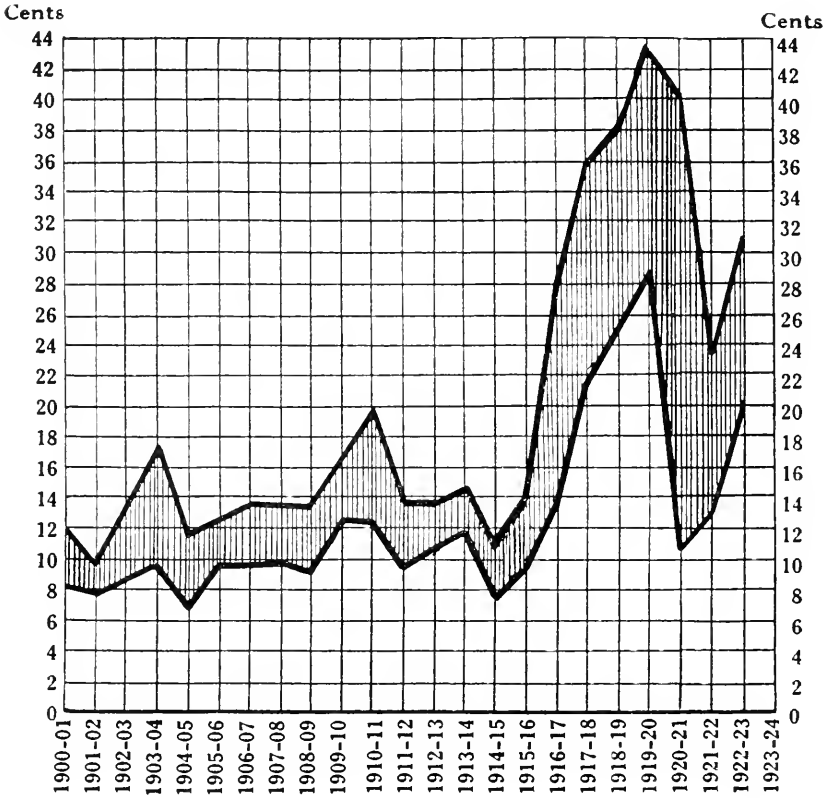
# British Exports of Cotton Cloth

[Statistics for 1900 to 1919 inclusive are in running yards and thereafter in square yards]

From statistics compiled by the British Board of Trade

YEAR										Exports
1900	.	.	.	.	.	.	.	.	.	5,031,727,000
1901	.	.	.	.	.	.	.	.	.	5,364,600,000
1902	.	.	.	.	.	.	.	.	.	5,331,552,200
1903	.	.	.	.	.	.	.	.	.	5,157,315,500
1904	.	.	.	.	.	.	.	.	.	5,591,822,600
1905	.	.	.	.	.	.	.	.	.	6,196,783,900
1906	.	.	.	.	.	.	.	.	.	6,260,771,400
1907	.	.	.	.	.	.	.	.	.	6,297,707,900
1908	.	.	.	.	.	.	.	.	.	5,530,808,500
1909	.	.	.	.	.	.	.	.	.	5,722,158,100
1910	.	.	.	.	.	.	.	.	.	6,017,625,200
1911	.	.	.	.	.	.	.	.	.	6,653,672,300
1912	.	.	.	.	.	.	.	.	.	6,912,919,700
1913	.	.	.	.	.	.	.	.	.	7,075,252,000
1914	.	.	.	.	.	.	.	.	.	5,735,744,500
1915	.	.	.	.	.	.	.	.	.	4,748,452,900
1916	.	.	.	.	.	.	.	.	.	5,254,222,700
1917	.	.	.	.	.	.	.	.	.	4,978,237,900
1918	.	.	.	.	.	.	.	.	.	3,699,252,300
1919	.	.	.	.	.	.	.	.	.	3,523,660,000
1920	.	.	.	.	.	.	.	.	.	4,435,405,000
1921	.	.	.	.	.	.	.	.	.	2,902,288,900
1922, January	.	.	.	.	.	.	.	339,117,400	.	
1922, February	.	.	.	.	.	.	.	251,954,800	.	
1922, March	.	.	.	.	.	.	.	303,857,500	.	
1922, April	.	.	.	.	.	.	.	302,598,200	.	
1922, May	.	.	.	.	.	.	.	341,424,800	.	
1922, June	.	.	.	.	.	.	.	311,907,300	.	
1922, July	.	.	.	.	.	.	.	443,609,800	.	
1922, August	.	.	.	.	.	.	.	377,985,000	.	
1922, September	.	.	.	.	.	.	.	395,823,900	.	
1922, October	.	.	.	.	.	.	.	353,654,000	.	
1922, November	.	.	.	.	.	.	.	398,726,300	.	
1922, December	.	.	.	.	.	.	.	360,517,300	.	
Total	.	.	.	.	.	.	.		.	4,183,729,100
1923, January	.	.	.	.	.	.	.	399,988,200	.	
1923, February	.	.	.	.	.	.	.	342,558,500	.	
1923, March	.	.	.	.	.	.	.	337,411,500	.	
1923, April	.	.	.	.	.	.	.	316,278,700	.	
1923, May	.	.	.	.	.	.	.	409,962,600	.	
1923, June	.	.	.	.	.	.	.	300,669,100	.	
1923, July	.	.	.	.	.	.	.	316,083,600	.	
1923, August	.	.	.	.	.	.	.	329,945,600	.	
1923, September	.	.	.	.	.	.	.	344,318,800	.	
1923, October	.	.	.	.	.	.	.	371,289,700	.	
1923, November	.	.	.	.	.	.	.	349,697,400	.	
1923, December	.	.	.	.	.	.	.	323,100,000	.	
Total	.	.	.	.	.	.	.		.	4,141,303,700

High and Low Prices of Middling Upland Spot Cotton in New York



The above chart is based on the table on the following page.

# High and Low Prices of Middling Upland Spot Cotton in New York

[In cents per pound]

From statistics compiled by the New York Cotton Exchange

The years as given are the official cotton seasons. Through 1913-14 the seasons were from September 1 to August 31. Starting with 1914-15 they have been from August 1 to July 31.

SEASON	High	Low
1900-01	12	8.16
1901-02	9 $\frac{1}{2}$	7.16
1902-03	13.50	8.30
1903-04	17.25	9.50
1904-05	11.65	6.85
1905-06	12.60	9.85
1906-07	13.50	9.60
1907-08	13.55	9.90
1908-09	13.15	9.00
1909-10	16.45	12.40
1910-11	19.75	12.30
1911-12	13.40	9.20
1912-13	13.40	10.75
1913-14	14.50	11.90
1914-15	10.60	7.25
1915-16	13.45	9.20
1916-17	27.65	13.35
1917-18	36.00	21.20
1918-19	38.20	25.00
1919-20	43.75	28.85
1920-21	40.00	10.85
1921-22	23.75	12.80
1922-23	31.30	20.35

## Highest and Lowest Prices paid for the Principal

DURING MONTH OF —	JANUARY DELIVERY		MARCH DELIVERY		MAY DELIVERY		JULY DELIVERY	
	High	Low	High	Low	High	Low	High	Low
<i>Season of 1912-13</i>								
September, 1912 . . . . .	11.76	10.85	11.93	10.95	12.00	11.10	11.99	11.23
October . . . . .	11.43	10.34	11.58	10.52	11.63	10.57	11.64	10.66
November . . . . .	12.89	11.32	12.98	11.50	12.89	11.53	12.84	11.55
December . . . . .	12.90	12.23	13.00	12.29	13.00	12.27	12.95	12.24
January, 1913 . . . . .	13.18	12.30	12.87	11.80	12.87	11.69	12.84	11.57
February . . . . .	11.79	11.25	12.64	12.00	12.50	11.84	12.45	11.81
March . . . . .	11.62	11.30	12.76	12.06	12.17	11.75	12.07	11.67
April . . . . .	11.65	10.81	11.42	10.90	12.36	11.22	12.22	11.28
May . . . . .	11.23	10.81	11.31	10.93	11.75	11.25	11.83	11.35
June . . . . .	11.67	10.94	11.78	11.07	11.75	11.25	12.25	11.35
July . . . . .	11.49	11.00	11.57	11.10	11.57	11.14	12.25	11.70
August . . . . .	12.24	10.72	12.33	10.83	12.37	10.88	12.31	11.89
Season . . . . .	13.18	10.34	13.00	10.52	13.00	10.57	12.95	10.66
<i>Season of 1921-22</i>								
August, 1921 . . . . .	16.96	12.65	17.08	12.99	17.18	13.10	17.08	13.89
September . . . . .	21.75	16.30	22.12	16.48	22.38	16.55	22.30	16.52
October . . . . .	21.60	17.60	21.60	17.45	21.00	17.10	20.20	16.70
November . . . . .	18.70	16.08	18.62	16.10	18.27	16.05	17.82	15.70
December . . . . .	19.14	16.80	19.06	16.85	18.57	16.70	18.09	16.25
January, 1922 . . . . .	19.25	16.98	19.20	16.00	18.72	15.80	18.20	15.50
February . . . . .	16.80	15.43	18.76	16.42	18.46	16.15	17.80	15.75
March . . . . .	16.90	16.00	18.50	17.35	18.23	17.50	17.55	16.93
April . . . . .	17.89	16.71	18.02	16.72	18.28	17.60	17.85	17.15
May . . . . .	20.50	17.80	20.40	17.86	21.65	18.26	21.25	17.75
June . . . . .	22.55	19.65	22.47	19.50	22.29	19.59	22.95	20.15
July . . . . .	22.75	20.65	22.70	20.68	22.42	20.50	23.25	20.92
Season . . . . .	22.75	12.65	22.70	12.99	22.42	13.10	23.25	13.89
<i>Season of 1922-23</i>								
August, 1922 . . . . .	22.76	19.98	22.80	20.00	22.70	20.00	22.50	19.95
September . . . . .	23.00	20.11	22.97	20.24	22.95	20.20	22.60	20.00
October . . . . .	24.29	20.33	24.35	20.40	24.24	20.35	24.00	20.22
November . . . . .	26.56	23.63	26.45	23.67	26.12	23.56	25.74	23.28
December . . . . .	26.75	24.15	27.02	24.29	27.10	24.22	26.87	23.96
January, 1923 . . . . .	28.85	26.10	28.87	26.30	29.05	26.31	28.79	26.10
February . . . . .	25.74	24.50	30.17	26.93	30.29	27.22	29.39	26.77
March . . . . .	26.50	23.25	31.35	29.68	31.59	28.32	30.74	27.50
April . . . . .	25.32	23.07	24.80	23.00	30.05	26.90	29.25	26.06
May . . . . .	24.20	21.50	24.14	21.61	28.85	24.90	27.47	23.60
June . . . . .	24.59	22.10	24.50	22.08	24.30	22.00	28.80	25.39
July . . . . .	23.93	20.52	23.93	20.70	23.80	20.73	27.25	22.50
Season . . . . .	28.85	19.98	31.35	20.00	31.59	20.00	30.74	19.95

## Options on the New York Cotton Exchange

AUGUST DELIVERY		SEPTEMBER DELIVERY		OCTOBER DELIVERY		DECEMBER DELIVERY		DURING MONTH OF —
High	Low	High	Low	High	Low	High	Low	
11.80	11.44	11.25	11.07	11.64	10.85	11.85	10.98	<i>Season of 1912-13</i>
11.53	10.68	11.33	10.56	11.20	10.00	11.36	10.28	September, 1912
12.71	11.50	12.15	11.55	12.00	11.29	12.77	11.27	October
12.81	12.20	12.19	11.77	12.08	11.60	12.85	12.13	November
12.72	11.47	11.84	11.17	11.85	11.10	11.72	11.14	December
12.25	11.67	11.85	11.36	11.80	11.28	11.81	11.29	January, 1913
11.96	11.60	11.68	11.38	11.64	11.33	11.67	11.34	February
12.10	11.13	11.72	10.94	11.66	10.81	11.69	10.83	March
11.62	11.12	11.30	10.91	11.26	10.83	11.26	10.84	April
12.19	11.25	11.90	11.07	11.75	10.98	11.75	10.98	May
12.20	11.44	11.84	11.25	11.65	11.12	11.57	11.05	June
12.48	11.48	12.35	11.12	12.42	10.92	12.36	10.83	July
12.81	10.68	12.35	10.56	12.42	10.00	12.85	10.28	August
								Season
13.78	12.30	15.80	12.55	16.63	12.14	16.98	12.66	<i>Season of 1921-22</i>
19.40	18.40	19.80	18.65	21.50	15.97	21.80	16.33	August, 1921
19.15	16.50	18.93	16.70	21.80	17.95	21.95	17.93	September
17.09	15.73	16.95	15.40	16.97	15.00	18.80	16.15	October
17.90	16.25	17.27	16.10	17.25	15.58	18.87	16.95	November
17.04	16.50	17.02	15.50	17.35	15.07	16.43	15.03	December
17.53	15.95	17.21	15.61	17.24	15.30	17.10	15.27	January, 1922
17.40	16.73	16.64	16.60	17.11	16.30	17.00	16.13	February
17.80	17.58	17.78	17.35	17.94	16.86	17.99	16.79	March
21.00	18.80	20.88	18.00	20.85	17.83	20.66	17.88	April
22.87	20.28	22.50	20.49	22.95	19.95	22.75	19.80	May
23.00	20.93	22.90	22.07	23.26	20.87	23.05	20.80	June
								July
23.00	12.30	22.90	12.55	23.26	12.14	23.05	12.66	Season
								<i>Season of 1922-23</i>
22.65	20.50	22.68	20.17	23.00	20.00	23.00	20.05	August, 1922
—	—	21.25	20.84	22.86	20.00	23.05	20.26	September
—	—	—	—	23.95	20.15	24.55	20.50	October
25.04	23.85	24.90	23.20	24.30	22.60	26.80	23.88	November
25.30	24.30	25.00	25.00	24.89	22.51	26.20	24.05	December
28.25	25.83	27.00	25.12	26.77	24.38	26.48	24.31	January, 1923
28.35	26.50	26.82	25.85	26.32	24.74	25.95	24.50	February
29.62	26.78	27.45	24.85	27.20	24.40	26.82	23.87	March
28.00	25.37	26.43	24.40	26.17	23.75	25.60	23.28	April
26.65	22.90	25.05	22.85	24.98	22.12	24.48	21.78	May
28.20	24.75	26.07	23.70	25.50	22.70	24.93	22.33	June
26.25	20.85	25.00	21.15	24.60	20.82	24.15	20.68	July
29.62	20.50	27.45	20.17	27.20	20.00	26.82	20.05	Season

## Monthly High and Low Prices of Middling Upland Spot Cotton at New York

	1912-13		1916-17		1917-18		1918-19		1919-20		1920-21		1921-22		1922-23	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
August	13.10	11.25	16.40	13.35	28.00	23.10	37.30	29.70	35.70	30.55	40.00	31.75	16.60	12.80	23.20	20.35
September	11.90	11.50	16.30	15.15	26.30	21.20	38.20	32.65	32.85	28.85	32.25	25.50	21.55	17.50	22.25	20.35
October	11.70	10.75	19.30	16.60	29.90	25.25	34.45	30.20	38.55	31.10	25.25	20.50	21.35	18.50	24.35	20.45
November	13.10	11.75	20.95	18.75	31.25	28.75	31.60	27.75	40.20	38.40	22.50	15.50	19.00	16.70	26.80	24.45
December	13.20	12.75	20.30	16.20	31.85	29.85	33.00	27.50	40.25	38.00	16.70	14.50	19.45	17.50	26.80	24.55
January	13.40	12.85	18.80	16.75	33.30	31.50	32.40	25.60	39.75	38.75	18.25	11.30	19.05	16.45	28.75	26.45
February	13.05	12.50	17.05	14.30	32.65	31.20	27.85	25.00	40.10	37.55	14.20	11.25	18.85	16.85	30.15	27.40
March	12.90	12.40	19.30	17.00	35.05	32.70	28.70	26.10	43.25	40.25	12.55	11.20	18.70	17.80	31.30	28.75
April	12.60	11.70	21.15	19.35	36.00	26.75	29.65	28.30	43.25	41.25	12.45	11.65	18.35	17.75	30.05	27.30
May	12.10	11.80	22.10	19.60	30.10	25.70	34.00	28.75	43.00	40.00	13.15	12.45	21.80	18.95	28.90	25.30
June	12.50	11.70	27.40	22.65	32.30	29.00	34.95	30.35	40.00	37.75	12.95	10.85	23.30	20.75	29.90	27.25
July	12.45	11.95	27.65	24.60	34.10	28.55	36.60	33.40	43.75	39.25	12.85	11.95	23.75	21.45	28.05	22.45
Season	13.40	10.75	27.65	13.35	36.00	21.20	38.20	25.00	43.75	28.85	40.00	10.85	23.75	12.80	31.30	20.35



# Relative Wholesale Prices of Cotton Yarn and Cotton Fabrics in Comparison with Other Groups of Commodities, Quarter by Quarter, from 1914 to 1924.

[Prices of 1913, represented by 100, taken as basis]

Compiled by United States Bureau of Labor Statistics

	Cotton Yarn 10-1 Carded	Pepperell Brown Sheeting 4-4	Lonsdale Bleached Muslin 4-4	Farm Prod- ucts	Foods	Fuel and Light- ing	Metals and Metal Prod- ucts	Build- ing Ma- terials	Chem- icals and Drugs	House Fur- nish- ing Goods	All Com- modi- ties
Average of 1913	100	100	100	100	100	100	100	100	100	100	100
January, 1914	99.4	102.3	106.2	103	101	99	88	93	98	100	98
April, 1914	99.4	98.9	103.1	102	95	98	88	93	97	100	98
July, 1914	97.2	95.0	103.1	103	99	91	83	92	95	100	97
October, 1914	76.8	88.7	103.1	101	106	88	83	90	108	100	97
January, 1915	74.6	78.4	84.9	104	106	87	82	88	108	99	98
April, 1915	74.6	81.9	91.0	104	105	82	90	90	118	99	99
July, 1915	72.3	81.9	91.0	104	104	81	105	94	130	100	100
October, 1915	88.1	85.3	91.0	106	102	94	105	98	151	100	102
January, 1916	94.9	95.5	97.0	110	109	113	133	110	184	103	113
April, 1916	101.7	102.3	103.1	113	114	120	164	120	200	104	121
July, 1916	114.1	105.7	106.2	117	117	121	158	120	175	107	123
October, 1916	135.6	133.0	121.3	136	134	128	164	124	164	109	136
January, 1917	153.6	150.1	133.4	152	140	171	198	138	173	118	153
April, 1917	162.7	163.7	136.5	184	164	164	230	155	186	121	173
July, 1917	203.3	191.0	194.1	196	169	176	292	168	205	129	188
October, 1917	189.8	197.8	206.2	207	180	153	207	156	231	130	183
January, 1918	242.3	232.6	218.3	211	182	164	183	161	223	137	184
April, 1918	278.4	327.4	279.0	213	181	166	184	169	228	144	190
July, 1918	289.7	- <sup>1</sup>	303.2	217	185	175	189	177	209	159	196
October, 1918	275.6	274.6	303.2	225	198	176	192	177	211	164	202
January, 1919	201.3	260.6	258.5	224	203	178	175	176	181	167	199
April, 1919	188.5	204.6	218.1	230	205	177	153	169	160	167	199
July, 1919	267.1	299.0	338.5	241	210	181	160	209	167	183	212
October, 1919	276.1	313.0	363.9	227	205	189	162	229	173	194	211
January, 1920	328.6	389.1	399.9	247	231	194	175	274	189	239	233
April, 1920	351.7	- <sup>1</sup>	412.4	243	238	231	203	300	210	242	245
July, 1920	316.7	- <sup>1</sup>	412.4	233	238	259	202	269	212	275	241
October, 1920	196.3	274.2	296.2	187	201	280	191	240	198	271	211
January, 1921	130.1	165.6	190.8	143	162	247	153	192	153	217	170
April, 1921	107.9	136.4	188.0	117	144	205	138	167	135	216	148
July, 1921	108.9	136.4	169.8	119	141	186	124	160	129	180	141
October, 1921	173.2	184.2	200.1	124	140	189	116	159	131	180	142
January, 1922	147.3	160.3	181.9	122	131	195	112	157	124	178	138
April, 1922	141.7	153.5	169.8	129	137	194	113	156	124	175	143
July, 1922	170.7	174.8	182.3	135	142	254	121	170	121	173	155
October, 1922	176.5	183.9	194.1	138	140	226	135	183	124	176	154
January, 1923	196.7	199.3	202.7	143	141	218	133	188	131	184	156
April, 1923	202.4	211.5	212.2	141	144	200	154	204	136	187	159
July, 1923	182.5	197.8	194.1	135	141	183	145	190	128	187	151
October, 1923	208.1	204.6	200.1	144	148	172	142	182	129	183	153
January, 1924	233.4	225.1	218.3	144	143	169	142	181	132	176	151

<sup>1</sup> No quotation.

## Prices of Extra Staple Cotton

Daily News Record

		AMERICAN STAPLES <sup>1</sup>				EGYPTIAN <sup>1</sup>			ARIZONA PIMAS <sup>2</sup>			Peru- vian <sup>3</sup> Mitafifi	Tangris <sup>3</sup> Strict Middling	New York Mid- dling Spots
		1 $\frac{1}{2}$ -Inch	1 $\frac{3}{8}$ -Inch	1 $\frac{1}{2}$ -Inch	1 $\frac{3}{8}$ -Inch	Uppers- Medium	Saks <sup>1</sup> - Medium	Saks <sup>1</sup> - High Grade	One's	Two's	Three's			
Jan.	3	32-33	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$ -36 $\frac{1}{2}$	37 $\frac{1}{2}$	30 $\frac{1}{2}$ -33	34 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	36 $\frac{1}{2}$	-	31-32 $\frac{1}{2}$	32-32 $\frac{1}{2}$	26.80
Jan.	6	31 $\frac{1}{2}$ -33	34-35	35 $\frac{1}{2}$ -37	37 $\frac{1}{2}$	31-33	35-37 $\frac{1}{2}$	39	37 $\frac{1}{2}$	36 $\frac{1}{2}$	-	30 $\frac{1}{2}$ -33 $\frac{1}{2}$	32 $\frac{1}{2}$	26.60
Jan.	9	31 $\frac{1}{2}$ -32	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35-36 $\frac{1}{2}$	37	32 $\frac{1}{2}$	34 $\frac{1}{2}$	38	37 $\frac{1}{2}$	36 $\frac{1}{2}$	-	30	32 $\frac{1}{2}$	26.60
Jan.	13	31-32 $\frac{1}{2}$	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35-36 $\frac{1}{2}$	37	32-33 $\frac{1}{2}$	35 $\frac{1}{2}$	39	37 $\frac{1}{2}$	36 $\frac{1}{2}$	-	31-32 $\frac{1}{2}$	32 $\frac{1}{2}$	27.80
Jan.	17	32-33	32 $\frac{1}{2}$ -35	35 $\frac{1}{2}$ -37	38	31-33	34 $\frac{1}{2}$ -37	38	37 $\frac{1}{2}$	36 $\frac{1}{2}$	-	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	31-32	27.60
Jan.	24	33 $\frac{1}{2}$ -34	34-35 $\frac{1}{2}$	36-37 $\frac{1}{2}$	38	33-35	35-38	39	38	37	-	31 $\frac{1}{2}$ -34	33	28.60
Jan.	29	32 $\frac{1}{2}$ -33 $\frac{1}{2}$	34-35 $\frac{1}{2}$	36-37	38	33-35	36-37 $\frac{1}{2}$	39	38	37	-	33-34 $\frac{1}{2}$	33	28.00
Feb.	2	32 $\frac{1}{2}$ -33 $\frac{1}{2}$	34-35	35 $\frac{1}{2}$ -36 $\frac{1}{2}$	37 $\frac{1}{2}$	34	35 $\frac{1}{2}$	38	38	37	-	34	34	27.75
Feb.	6	32 $\frac{1}{2}$ -33 $\frac{1}{2}$	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$ -36 $\frac{1}{2}$	37 $\frac{1}{2}$	33-34	34 $\frac{1}{2}$ -36	37	38	37	-	31 $\frac{1}{2}$ -33 $\frac{1}{2}$	34	28.65
Feb.	10	32 $\frac{1}{2}$ -33 $\frac{1}{2}$	34-35	36-37	38 $\frac{1}{2}$	31 $\frac{1}{2}$ -34 $\frac{1}{2}$	36-37	38	38	37	-	31-33	33 $\frac{1}{2}$	28.00
Feb.	14	32-33 $\frac{1}{2}$	34-35	35 $\frac{1}{2}$ -37	38	31 $\frac{1}{2}$ -34 $\frac{1}{2}$	35-37	38	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31-33	33 $\frac{1}{2}$	28.05
Feb.	17	32-33 $\frac{1}{2}$	34-35	35-36	38	32-34	35-37	39	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	33 $\frac{1}{2}$	28.50
Feb.	21	32 $\frac{1}{2}$ -33 $\frac{1}{2}$	34-35	36-37 $\frac{1}{2}$	38 $\frac{1}{2}$	32-34 $\frac{1}{2}$	35-37	38 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	32-34	33	29.00
Feb.	26	33-34	34 $\frac{1}{2}$ -35 $\frac{1}{2}$	36-37	39	32 $\frac{1}{2}$ -35	35-37 $\frac{1}{2}$	38 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	32 $\frac{1}{2}$ -34	33 $\frac{1}{2}$	29.85
Mar.	1	32 $\frac{1}{2}$ -34	34 $\frac{1}{2}$ -35 $\frac{1}{2}$	36	39	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$ -37 $\frac{1}{2}$	39	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	32-34	33 $\frac{1}{2}$	30.40
Mar.	5	33-34 $\frac{1}{2}$	35-36	36 $\frac{1}{2}$ -38	39	33-35 $\frac{1}{2}$	35-37	38 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	32 $\frac{1}{2}$ -35 $\frac{1}{2}$	33 $\frac{1}{2}$	30.90
Mar.	9	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35-36	36 $\frac{1}{2}$ -38	39	33-36	36-38	38 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	32 $\frac{1}{2}$ -35	34 $\frac{1}{2}$	30.75
Mar.	13	33 $\frac{1}{2}$ -35	35 $\frac{1}{2}$ -36 $\frac{1}{2}$	36 $\frac{1}{2}$ -38	39	34-36	36-38	39	39	38	-	33-36	34 $\frac{1}{2}$	31.25
Mar.	17	34-35	35 $\frac{1}{2}$ -36 $\frac{1}{2}$	37-38 $\frac{1}{2}$	39 $\frac{1}{2}$	34-36	35 $\frac{1}{2}$ -37 $\frac{1}{2}$	39	39	38	-	33-34 $\frac{1}{2}$	34 $\frac{1}{2}$	31.30
Mar.	20	33 $\frac{1}{2}$ -35	35-36 $\frac{1}{2}$	37-38 $\frac{1}{2}$	39 $\frac{1}{2}$	33 $\frac{1}{2}$ -35	35 $\frac{1}{2}$ -37 $\frac{1}{2}$	39	39	38	-	35	34 $\frac{1}{2}$	31.10
Mar.	24	34-35	35 $\frac{1}{2}$ -36 $\frac{1}{2}$	37-39	39	32 $\frac{1}{2}$ -35	35-37 $\frac{1}{2}$	38 $\frac{1}{2}$	39	38	-	34-35	34 $\frac{1}{2}$	29.55
Mar.	28	33-34 $\frac{1}{2}$	35-36	36-38	38 $\frac{1}{2}$	33-35	35 $\frac{1}{2}$ -37 $\frac{1}{2}$	38	39	38	-	33 $\frac{1}{2}$ -35	34 $\frac{1}{2}$	29.20
Apr.	2	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	34 $\frac{1}{2}$ -35 $\frac{1}{2}$	36-38	39	33-35	35 $\frac{1}{2}$ -37 $\frac{1}{2}$	38 $\frac{1}{2}$	39	38	-	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	34 $\frac{1}{2}$	28.55
Apr.	6	34	34 $\frac{1}{2}$ -35	36 $\frac{1}{2}$ -37 $\frac{1}{2}$	38-40	33-34 $\frac{1}{2}$	35-36 $\frac{1}{2}$	38	39 $\frac{1}{2}$	38 $\frac{1}{2}$	-	33-35	34 $\frac{1}{2}$	29.75
Apr.	10	33-34	34 $\frac{1}{2}$ -35	36-37	38 $\frac{1}{2}$	33-34 $\frac{1}{2}$	35-36 $\frac{1}{2}$	38	39 $\frac{1}{2}$	38 $\frac{1}{2}$	-	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	34 $\frac{1}{2}$	29.70
Apr.	13	33 $\frac{1}{2}$ -34	34 $\frac{1}{2}$ -35	36-37	38-40	34 $\frac{1}{2}$ -35 $\frac{1}{2}$	35-37	38	39 $\frac{1}{2}$	38 $\frac{1}{2}$	-	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	34 $\frac{1}{2}$	29.35
Apr.	17	33-34	34 $\frac{1}{2}$ -35	35 $\frac{1}{2}$ -36 $\frac{1}{2}$	38	32 $\frac{1}{2}$ -35 $\frac{1}{2}$	35 $\frac{1}{2}$ -37	38	39 $\frac{1}{2}$	38 $\frac{1}{2}$	-	33-34 $\frac{1}{2}$	34 $\frac{1}{2}$	28.75
Apr.	21	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	32 $\frac{1}{2}$ -33 $\frac{1}{2}$	34 $\frac{1}{2}$ -35 $\frac{1}{2}$	37	32 $\frac{1}{2}$ -34	34-36	37 $\frac{1}{2}$	39 $\frac{1}{2}$	38 $\frac{1}{2}$	-	31-33	34 $\frac{1}{2}$	27.30
Apr.	25	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	33-34	34 $\frac{1}{2}$ -36	37	32-34 $\frac{1}{2}$	34 $\frac{1}{2}$ -36 $\frac{1}{2}$	37 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31 $\frac{1}{2}$ -33 $\frac{1}{2}$	33 $\frac{1}{2}$	29.00
Apr.	28	32-33	33 $\frac{1}{2}$ -34	35-36	37 $\frac{1}{2}$	32-34	34 $\frac{1}{2}$ -36 $\frac{1}{2}$	37 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31-33	33 $\frac{1}{2}$	28.35
May	2	32-32 $\frac{1}{2}$	33-34	35-36	37 $\frac{1}{2}$	32-34	34 $\frac{1}{2}$ -36 $\frac{1}{2}$	37 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31-33	33 $\frac{1}{2}$	27.95
May	5	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	32-33 $\frac{1}{2}$	34-36	37	31-33 $\frac{1}{2}$	33-35	36 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31-33 $\frac{1}{2}$	33 $\frac{1}{2}$	26.85
May	9	30-31 $\frac{1}{2}$	32-33 $\frac{1}{2}$	34-35 $\frac{1}{2}$	36 $\frac{1}{2}$	30 $\frac{1}{2}$ -32 $\frac{1}{2}$	33-35	36 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31-33	33 $\frac{1}{2}$	26.55
May	12	30-31	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	33-34	36 $\frac{1}{2}$	30-32	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	36 $\frac{1}{2}$	38 $\frac{1}{2}$	37 $\frac{1}{2}$	-	31-32 $\frac{1}{2}$	33 $\frac{1}{2}$	25.45
May	15	29-30	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	33-34	35 $\frac{1}{2}$	29 $\frac{1}{2}$ -31	31-33	35	37	36	35	31 $\frac{1}{2}$ -32	32	26.20
May	19	29 $\frac{1}{2}$ -30 $\frac{1}{2}$	31-32	33-34	35 $\frac{1}{2}$	30-32	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$	37	36	35	31-32 $\frac{1}{2}$	33 $\frac{1}{2}$	27.15
May	22	29 $\frac{1}{2}$ -30 $\frac{1}{2}$	31-32	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$	30-32	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$	37	36	35	31-32 $\frac{1}{2}$	33 $\frac{1}{2}$	28.65
May	26	31-32	32-33 $\frac{1}{2}$	35-36 $\frac{1}{2}$	36	31-32 $\frac{1}{2}$	32-34 $\frac{1}{2}$	35 $\frac{1}{2}$	37	36	35	31-32 $\frac{1}{2}$	33 $\frac{1}{2}$	28.55
June	1	31-32 $\frac{1}{2}$	33 $\frac{1}{2}$ -34	35-36 $\frac{1}{2}$	37 $\frac{1}{2}$ -39	29 $\frac{1}{2}$ -32	31-33	35	37	36	35	30 $\frac{1}{2}$ -32	33 $\frac{1}{2}$	27.55
June	5	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	31 $\frac{1}{2}$ -33 $\frac{1}{2}$	34-35	35 $\frac{1}{2}$	29 $\frac{1}{2}$ -31	31 $\frac{1}{2}$ -34	35	37	36	35	30 $\frac{1}{2}$ -32	33 $\frac{1}{2}$	28.00
June	9	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	32-33	34-35	36	30 $\frac{1}{2}$ -32 $\frac{1}{2}$	32 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$	37	36	35	31-33	31 $\frac{1}{2}$	29.10
June	13	31 $\frac{1}{2}$ -33	33-34 $\frac{1}{2}$	35-36 $\frac{1}{2}$	36 $\frac{1}{2}$	31-33	33 $\frac{1}{2}$ -35	36	37	36	35	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	31 $\frac{1}{2}$	29.20
June	16	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	32-33	34-36	36	30 $\frac{1}{2}$ -33 $\frac{1}{2}$	32 $\frac{1}{2}$ -34	35	37	36	35	31-33	31 $\frac{1}{2}$	29.10
June	19	30-31	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	34-35 $\frac{1}{2}$	36	30-33	32-34	35 $\frac{1}{2}$	37	36	35	30-32 $\frac{1}{2}$	31 $\frac{1}{2}$	27.80
June	23	31-32	32 $\frac{1}{2}$ -33 $\frac{1}{2}$	34 $\frac{1}{2}$ -35 $\frac{1}{2}$	36	30 $\frac{1}{2}$ -33 $\frac{1}{2}$	33 $\frac{1}{2}$ -35	35 $\frac{1}{2}$	37	36	35	31-32 $\frac{1}{2}$	31 $\frac{1}{2}$	29.10
June	28	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	32-33	33 $\frac{1}{2}$ -35	35 $\frac{1}{2}$	30 $\frac{1}{2}$ -33	33-35	35 $\frac{1}{2}$	37	36	35	30 $\frac{1}{2}$ -32 $\frac{1}{2}$	31 $\frac{1}{2}$	28.55
July	2	30-31	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35 $\frac{1}{2}$	30 $\frac{1}{2}$ -33	33-34 $\frac{1}{2}$	35	37	36	35	31-32 $\frac{1}{2}$	31 $\frac{1}{2}$	27.85
July	6	29 $\frac{1}{2}$ -31	31 $\frac{1}{2}$ -32	33-34	35 $\frac{1}{2}$ -37	32 $\frac{1}{2}$	33	35	37	36	35	31-32 $\frac{1}{2}$	31	28.05
July	10	30-31	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35	30 $\frac{1}{2}$ -32 $\frac{1}{2}$	33-34	35	37	36	35	31-31 $\frac{1}{2}$	31	27.65
July	14	30-31 $\frac{1}{2}$	31 $\frac{1}{2}$ -33	33 $\frac{1}{2}$ -34 $\frac{1}{2}$	35	31-32 $\frac{1}{2}$	33-34 $\frac{1}{2}$	35	37	36	35	31-32	31	28.00
July	17	30 $\frac{1}{2}$ -31 $\frac{1}{2}$	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	33-34	35	30 $\frac{1}{2}$ -32	31 $\frac{1}{2}$ -33	34	36 $\frac{1}{2}$	35 $\frac{1}{2}$	34 $\frac{1}{2}$	30 $\frac{1}{2}$	31	27.35
July	21	30-31	31 $\frac{1}{2}$ -32 $\frac{1}{2}$	33-34	35	30 $\frac{1}{2}$ -32	32 $\frac{1}{2}$ -34	34	36	35	34	30-31 $\frac{1}{2}$	31	27.25
July	24	28-29	29 $\frac{1}{2}$ -30	31-32 $\frac{1}{2}$	34	30-32 $\frac{1}{2}$	32-							

## Prices of Extra Staple Cotton — (Concluded)

Daily News Record

	AMERICAN STAPLES <sup>1</sup>				EGYPTIAN <sup>1</sup>			ARIZONA PIMAS <sup>2</sup>			Peru- vian <sup>3</sup> Mitafifi	Tangris <sup>3</sup> Strict Middling	New York Mid- dling Spots
	1½-Inch	1⅜-Inch	1½-Inch	1⅝-Inch	Uppers- Medium	Saks- Medium	Saks- High Grade	One's	Two's	Three's			
Sept. 5	29-30	30-31½	32-34½	35½	30-32	33½-35	35½	34	33	32	29-30½	31	26.80
Sept. 8	31½-33	33-34	34½-36	36½	30½-32½	33½-35½	35½	34½	33½	32½	30-31½	31	28.95
Sept. 12	32-33	33-34	35-36½	37	31-33	34-36	36½	34½	33½	32½	30-31½	32½	29.05
Sept. 15	33-34	34-35	36½-38	39	33-34	35½-36½	37	36	35	34	32½-33½	32½	28.90
Sept. 19	33½-34½	34½-35½	37-38½	39½	32-34	35-36½	37½	37	36	35	31-33	32½	29.75
Sept. 22	33½-34½	35-36	37-38½	40	32½-34	35½-37½	38½	37½	36½	35½	31½-33½	34½	30.10
Sept. 25	34½-35½	35½-36½	37-38½	39½	33-34½	36-37½	38½	38	37	36	32-33½	34½	29.10
Sept. 29	35½-36	36½-37	37½-38½	39	33-34½	36-37½	38	39	38	37	32-33½	35½	29.40
Oct. 2	34-35½	36-37½	38-39½	40	33-34½	35½-38	39	39	38	37	33-34	35½	29.00
Oct. 6	34-35	35½-36½	37½-38½	40	32½-34	35-36½	38	39	38	37	32-33½	35½	28.55
Oct. 10	33½-35	34½	37-38½	39½	32½-34	35-36½	38	38	37	36	31½-33½	35½	28.80
Oct. 13	34½-35½	35-36½	37-39	39	32½-33½	35-36½	37	38	37	36	32-33½	35½	29.70
Oct. 17	34½-35½	35½-36½	37½-39	39	32½-33½	35-36½	37	38½	37½	36½	32-33½	35	30.05
Oct. 20	34½-35½	35½-36½	37½-38½	39	33-34½	35½-37	37½	38½	37½	36½	32-34	34½	30.30
Oct. 24	35-36	36½-37	37½-38½	39	33-34½	35½-36½	38	38½	37½	36½	32½-34	34½	31.00
Oct. 27	35-36	36-37	37½-38½	39	33½-34½	36-37½	38	38½	37½	36½	32½-34	34½	31.75
Nov. 1	34½-35½	36-37	37½-38½	39½	33-34½	35½-37	38	38½	37½	36½	33-34	35	31.25
Nov. 6	36-37	37-38	38-39½	40-41	36½-38	38-39	39-40	39½	38½	37½	33½-35	36	33.25
Nov. 10	37-38	38-39	39-40	40½	37-38	39-39½	40	-	-	-	34½-35½	37	33.50
Nov. 13	36½-37½	37½-38½	38½-39½	40	38-39	39½-40½	41	41½	40½	39½	34-36½	38½	33.70
Nov. 17	36½-37½	37½-38½	38½-39½	40	38½-40	39½-41	41	42½	41½	40½	35½-38	38½	34.70
Nov. 20	36½-37	37-38	38-39½	40	38-39½	40-41½	42	44½	43½	42½	35-37½	38½	35.35
Nov. 24	37½-38	38-39	39-40	41	40-41½	42-44	45	44½	43½	42½	36½-38½	40	35.80
Nov. 27	37-38	38-39	39-40½	41	42-44	46	49	44½	43½	42½	37-38	41	36.55
Dec. 1	38-39	39-40	40-41	41½	44-48	47-49	49	45	44	43	38-40	41	37.65
Dec. 4	38½-39½	39½-40	40-41½	41½	45	49	50	45½	44½	43½	39	41½	36.65
Dec. 8	37½-38½	38½-39	39½-40½	40½	43-46	46-48	48	44½	43½	42½	38-40	41½	35.00
Dec. 11	36½-37½	37½-38½	38-40	40	42-46	45-48	48	44½	43½	42½	38	41½	34.50
Dec. 15	37-38	38-39	39-39½	40	42-44	44-46	47	45	44	43	39-40	41½	34.35
Dec. 18	36½-37	37-37½	38-38½	39	41-44	44½-46	47	46	45	44	38½-39½	41½	35.50
Dec. 22	38-38½	38½-39	39-40	41½	41½-43	44½-46	46½	46	45	44	38½-40	41½	36.30
Dec. 26	38-38½	38½-39½	39½-40½	41	40½-43	45-47	47	46	45	44	38½-40	42	37.25
Dec. 29	38-38½	38½-39½	39½-40½	41	41-43½	45-47	47	45½	44½	43	39-40½	42½	36.46

<sup>1</sup> New Belford basis.<sup>2</sup> Boston basis.<sup>3</sup> New York basis.

# Actual Prices of Cotton in Comparison with Other Basic Raw Materials, Quarter by Quarter, from 1914 to 1924

Compiled by United States Bureau of Labor Statistics

	Cotton Middling Upland (per Pound)	Wool 4- $\frac{1}{2}$ Grades Scoured (per Pound)	Wheat No. 1 Northern (per Bushel)	Corn No. 2 Mixed, Contract Grade (per Bushel)	Cattle Good to Choice Steers (per 100 Pounds)	Copper Electro- lytic (per Pound)	Iron Bessemer, Pig (per 2,240 Pounds)	Coal, Bitu- minous (per 2,000 Pounds)
Average of 1913	<b>\$0.128</b>	\$0.471	\$0.874	\$0.625	\$8.507	\$0.157	\$17.133	\$2.200
January, 1914	.127	.417	.876	.614	8.757	.149	14.960	2.200
April, 1914	.132	.417	.912	.668	8.713	.144	14.900	2.200
July, 1914	.131	.444	.897	.710	9.219	.134	14.900	2.200
October, 1914	—	.458	1.103	.732	9.431	.117	14.840	2.200
January, 1915	.083	.514	1.353	.719	8.533	.130	14.590	2.200
April, 1915	.103	.557	1.541	.749	8.031	.159	14.550	2.260
July, 1915	.092	.557	1.390	.783	9.213	.199	14.950	2.200
October, 1915	.125	.600	1.012	.635	8.876	.180	16.950	2.200
January, 1916	.124	.643	1.289	.761	8.666	.229	21.580	2.200
April, 1916	.121	.686	1.217	.760	9.119	.269	21.950	2.200
July, 1916	.130	.686	1.170	.808	9.985	.265	21.950	2.200
October, 1916	.181	.686	1.757	.955	9.905	.285	24.080	3.750
January, 1917	.176	.872	1.917	.982	10.531	.295	35.950	4.500
April, 1917	.208	1.000	2.382	1.397	12.310	.340	42.200	5.000
July, 1917	.261	1.200	2.582	2.044	12.560	.318	57.450	5.000
October, 1917	.281	1.382	2.170	1.968	14.675	.235	37.250	3.300
January, 1918	.324	1.455	2.170	1.775	13.113	.235	37.250	3.600
April, 1918	.317	1.455	2.170	1.665	15.175	.235	36.150	3.600
July, 1918	.312	1.437	2.170	1.665	17.625	.255	36.600	4.100
October, 1918	.325	1.437	2.216	1.385	17.856	.260	36.600	4.100
January, 1919	.296	1.200	2.223	1.401	18.413	.204	33.600	4.100
April, 1919	.290	1.091	2.589	1.609	18.325	.153	29.350	4.000
July, 1919	.351	1.236	2.680	1.920	16.869	.215	29.350	4.000
October, 1919	.355	1.236	2.625	1.400	17.594	.217	29.350	4.500
January, 1920	.393	1.236	2.931	1.503	15.938	.193	40.400	4.100
April, 1920	.424	1.200	3.006	1.706	13.906	.192	43.650	5.500
July, 1920	.410	.909	2.831	1.549	15.381	.190	47.150	6.000
October, 1920	.226	.727	2.106	.888	14.688	.168	49.210	7.100
January, 1921	.167	.546	1.788	.682	9.840	.129	33.960	5.600
April, 1921	.121	.527	1.406	.578	8.719	.125	26.960	4.850
July, 1921	.124	.491	1.438	.614	8.406	.125	22.835	4.600
October, 1921	.197	.473	1.319	.470	8.875	.127	21.960	4.100
January, 1922	.179	.582	1.300	.484	8.150	.136	21.560	3.750
April, 1922	.181	.727	1.563	.588	8.406	.126	22.585	3.600
July, 1922	.223	.818	1.423	.643	9.700	.137	26.770	5.390
October, 1922	.228	.836	1.132	.691	10.245	.137	35.170	6.390
January, 1923	.275	.982	1.221	.711	9.780	.146	29.270	5.640
April, 1923	.290	1.018	1.279	.793	9.015	.169	32.770	4.890
July, 1923	.259	1.000	1.084	.857	10.590	.144	28.464	3.890
October, 1923	.301	.946	1.172	1.011	10.450	.126	26.960	3.890
January, 1924	.347	.982	1.151	.759	9.469	.126	24.760	3.640

# Relative Prices of Cotton in Comparison with Other Basic Raw Materials, Quarter by Quarter, from 1914 to 1924

[Prices of 1913, represented by 100, taken as basis]

Compiled by United States Bureau of Labor Statistics

	Cotton Middling (Upland)	Wool 4-8 Grades Scoured	Wheat No. 1 Northern	Corn No. 2 Mixed, Contract Grade	Cattle Good to Choice Steers	Copper Electro- lytic	Iron Bessemer, Pig	Coal, Bitu- minous
Average of 1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
January, 1914	99.3	88.5	100.3	98.2	102.9	94.6	87.3	100.0
April, 1914	103.0	88.5	104.4	106.8	102.4	91.4	87.0	100.0
July, 1914	102.3	94.3	102.6	113.6	108.4	85.4	87.0	100.0
October, 1914	—	97.3	126.2	117.0	110.9	74.4	86.6	100.0
January, 1915	64.7	109.2	154.9	114.9	100.3	82.6	85.2	100.0
April, 1915	80.5	118.3	176.4	119.9	94.4	101.0	84.9	100.0
July, 1915	71.9	118.3	159.0	125.3	108.3	126.8	87.3	100.0
October, 1915	97.7	127.4	115.7	101.6	104.3	114.4	98.9	100.0
January, 1916	97.0	136.5	147.6	121.8	101.9	145.5	126.0	100.0
April, 1916	94.3	145.6	139.3	121.6	107.2	170.9	128.1	100.0
July, 1916	101.6	145.6	133.9	129.3	117.4	168.8	128.1	100.0
October, 1916	141.7	145.6	201.1	152.8	116.4	181.2	140.6	170.5
January, 1917	137.8	182.3	219.4	157.1	123.8	187.5	209.8	204.5
April, 1917	159.0	208.8	272.6	223.5	144.7	216.1	246.3	227.3
July, 1917	203.9	254.8	295.4	327.0	147.6	202.5	335.3	227.3
October, 1917	219.9	288.8	248.4	314.8	172.5	149.4	217.4	150.0
January, 1918	253.1	308.9	248.3	284.0	154.1	149.7	217.4	162.7
April, 1918	247.7	308.9	248.3	266.4	178.4	149.7	211.0	162.7
July, 1918	243.8	305.1	248.3	266.4	207.2	162.4	213.6	186.4
October, 1918	253.9	305.1	253.5	221.6	209.9	165.6	213.6	186.4
January, 1919	231.3	254.8	254.3	224.2	216.4	129.9	196.1	186.4
April, 1919	226.6	231.6	296.2	257.4	215.4	97.5	171.3	181.8
July, 1919	274.2	262.4	306.6	307.2	198.3	136.9	171.3	181.8
October, 1919	277.3	262.4	300.3	224.0	206.8	138.2	171.3	204.5
January, 1920	307.1	258.4	335.6	240.4	187.3	122.8	235.8	186.4
April, 1920	331.4	250.6	344.2	273.0	163.5	122.0	254.8	250.0
July, 1920	320.6	189.9	324.1	247.8	180.8	120.8	275.2	272.7
October, 1920	176.8	151.9	241.1	142.0	172.7	106.5	287.2	322.7
January, 1921	130.6	114.0	204.7	109.1	115.7	81.9	198.2	254.5
April, 1921	94.9	110.1	160.9	92.5	102.5	79.3	157.4	220.5
July, 1921	96.6	102.6	164.7	98.2	98.8	79.7	133.3	209.1
October, 1921	154.0	98.7	151.0	75.1	104.3	80.6	128.2	186.4
January, 1922	140.0	121.6	148.8	77.4	95.8	86.1	125.8	170.5
April, 1922	141.5	151.9	178.9	94.1	98.8	80.3	131.8	163.6
July, 1922	174.6	170.9	162.8	102.8	114.0	87.2	156.3	245.0
October, 1922	178.0	174.8	129.6	110.6	120.4	87.0	205.3	290.5
January, 1923	214.7	205.2	139.8	113.7	115.0	92.5	170.8	256.4
April, 1923	226.3	212.7	146.4	126.8	106.0	107.5	191.3	222.3
July, 1923	202.3	208.8	124.1	137.1	124.5	91.7	166.1	176.8
October, 1923	234.9	197.6	134.2	161.7	122.8	80.3	157.4	176.8
January, 1924	271.4	205.2	131.7	121.3	111.3	80.1	144.5	165.5

# Prices of Carded Warp Yarns and Spot Cotton in the United States, Week by Week, during the Year 1923

[Prices are per pound]

Compiled by Frederick B. Macy & Co., New Bedford

DATE	CARDED SINGLE WARPS				CARDED TWO-PLY WARPS				Mid-up Spot Cotton, New York (in Cents)	Staple Cotton, 1 $\frac{1}{8}$ In- ches (in Cents) <sup>1</sup>
	8s	20s	30s	40s	8s	20s	30s	40s		
January 2 .	\$0 43	\$0 49	\$0 59	\$0 68	\$0 43	\$0 49	\$0 60	\$0 68	26.45	33.50
9 .	43	50	59	68	44	51	60	70	26.60	34.00
16 .	43 $\frac{1}{2}$	50	59	68	44	51	61	70	27.40	34.00
23 .	44	50	60	68	45	52	62	70	28.75	34.00
30 .	44	51	60	68	45	52	62	71	28.10	34.00
February 6 .	44	51	60	68	45	52	62	71	28.65	34.00
13 .	44	51	60	67	44	52	62	71	28.05	34.00
20 .	43	50	59	66	44	51	61	70	29.00	34.00
27 .	44	51	60	68	46	52	63	72	30.15	35.00
March 6 .	45	53	60	68	46	54	64	72	31.00	35.50
13 .	47	54	61	70	47	55	65	74	31.25	35.50
20 .	47	54	62	70	48	55	65	74	31.10	35.50
27 .	48	55	62	72	49	56	65	75	29.35	35.50
April 3 .	47	53	61	72	48	54	64	74	29.30	34.50
10 .	47	53	61	72	48	54	64	74	29.70	34.50
17 .	46	52	61	70	47	53	63	72	28.25	34.50
24 .	45	51	60	69	46	52	61	70	28.05	35.00
May 1 .	44	50	59	68	45	51	61	69	27.50	33.50
8 .	44	48	59	68	44	50	61	69	26.05	32.50
15 .	40	45	56	64	41	48	59	65	26.20	30.50
22 .	40	45	56	62	41	48	58	65	28.65	31.00
29 .	40	45	55	61	41	47	57	64	28.90	32.50
June 5 .	40	45	55	61	41	47	57	64	28.00	—
12 .	40	45	55	61	41	47	57	64	29.70	—
19 .	40	45	55	61	41	47	56	63	27.80	—
26 .	39	45	53	61	40	47	56	62	28.25	—
July 3 .	39	44	53	61	40	45	55	62	27.25	31.50
10 .	38	44	52	61	39	45	54	62	27.65	31.50
17 .	38	43	52	60	38	44	54	61	27.35	30.50
24 .	36	40	48	58	36	42	50	60	24.65	29.50
31 .	35	39	46	55	35	40	47	57	22.45	28.00
August 7 .	35	39	46	55	35	40	47	57	25.15	27.00
14 .	35	40	46	55	36	41	47	57	25.65	29.50
21 .	36	41	46	56	38	42	48	58	25.75	30.50
28 .	37	42	48	58	39	43	50	60	25.45	30.50
September 4 .	38	42	48	58	39	43	50	60	25.95	30.50
11 .	42	47	50	62	44	47	52	62	29.45	33.00
18 .	44	49	53	62	45	50	56	64	29.75	35.00
25 .	45	50	55	63	47	51	57	64	29.10	36.00
October 2 .	45	50	55	63	47	51	57	64	29.00	37.00
9 .	44	49	54	62	45	50	56	63	28.35	36.00
16 .	44	49	53	62	44	50	55	63	30.25	35.50
23 .	44	49	55	63	46	51	56	64	30.85	36.50
30 .	45	49	55	63	46	51	56	64	31.80	37.50
November 7 .	47	50	57	65	48	52	58	67	34.50	37.50
13 .	49	54	59	68	50	55	60	70	33.70	37.00
20 .	50	55	60	70	51	56	61	71	35.35	37.50
27 .	50	55	60	70	51	56	62	71	36.55	38.50
December 4 .	50	55	60	70	51	56	62	71	36.65	39.50
11 .	49	54	59	69	50	55	61	70	34.50	38.50
18 .	49	54	60	69	50	55	62	70	35.50	38.00
26 .	49	54	60	69	50	55	62	70	37.25	39.00

<sup>1</sup> New Bedford basis.

# Prices of Combed Warp Yarns and Spot Cotton in the United States, Week by Week, during the Year 1923

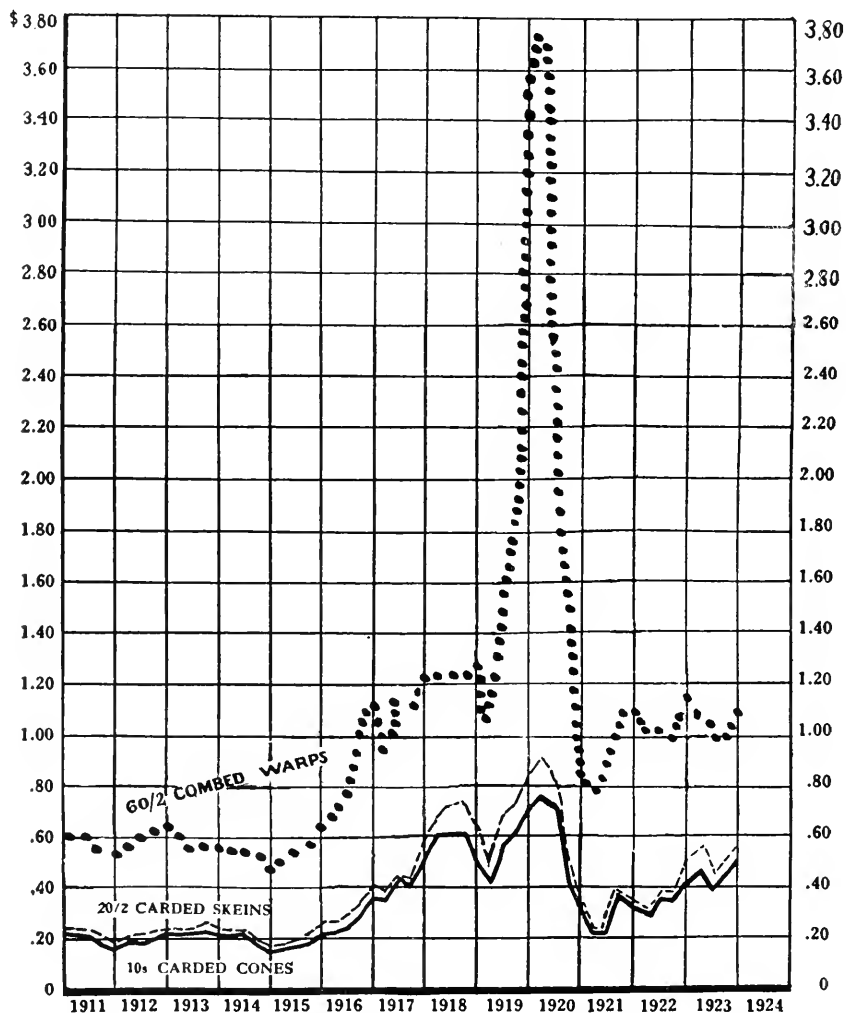
[Prices are per pound]

Compiled by Frederick B. Macy & Co., New Bedford

DATE	COMBED SINGLE WARPS				COMBED TWO-PLY WARPS				Mid-up Spot Cotton, New York (in Cents)	Staple Cotton, 1 <sup>1</sup> / <sub>2</sub> In- ches (in Cents) <sup>1</sup>
	30s	40s	50s	60s	30s	40s	50s	60s		
January 2 .	\$0 70	\$0 76	\$0 90	\$1 10	\$0 76	\$0 85	\$0 98	\$1 15	26.45	33.50
9 .	70	76	90	1 10	76	85	98	1 15	26.60	34.00
16 .	70	76	90	1 10	76	85	98	1 15	27.40	34.00
23 .	70	76	90	1 10	76	85	98	1 15	28.75	34.00
30 .	70	76	90	1 10	76	85	98	1 15	28.10	34.00
February 6 .	70	76	90	1 10	76	85	98	1 15	28.65	34.00
13 .	72	78	92	1 10	78	87	98	1 15	28.05	34.00
20 .	74	80	95	1 10	80	87	1 00	1 15	29.00	34.00
27 .	74	80	95	1 10	80	87	1 00	1 15	30.15	35.00
March 6 .	74	80	95	1 10	80	87	1 00	1 15	31.00	35.50
13 .	74	80	95	1 10	80	87	1 00	1 15	31.25	35.50
20 .	74	80	95	1 10	80	87	1 00	1 15	31.10	35.50
27 .	75	80	97	1 10	80	87	1 05	1 15	29.35	35.50
April 3 .	75	80	97	1 10	80	87	1 05	1 15	29.30	34.50
10 .	75	80	97	1 10	80	87	1 05	1 15	29.70	34.50
17 .	75	80	95	1 10	80	87	1 05	1 15	28.25	34.50
24 .	75	78	95	1 10	78	85	1 05	1 15	28.05	35.00
May 1 .	75	78	95	1 10	78	85	1 05	1 15	27.50	33.50
8 .	75	78	95	1 10	78	85	1 05	1 15	26.05	32.50
15 .	75	78	90	1 05	78	85	1 00	1 10	26.20	30.50
22 .	72	76	90	1 05	75	82	1 00	1 10	28.65	31.00
29 .	72	76	90	1 05	75	82	1 00	1 10	28.90	32.50
June 5 .	72	76	90	1 05	75	82	1 00	1 10	28.00	-
12 .	72	76	90	1 05	75	82	1 00	1 10	29.70	-
19 .	72	76	90	1 05	75	82	1 00	1 10	27.80	-
26 .	72	76	90	1 05	75	82	1 00	1 10	28.25	-
July 3 .	72	76	90	1 05	75	82	1 00	1 10	27.25	31.50
10 .	72	76	90	1 05	75	82	1 00	1 10	27.65	31.50
17 .	72	76	90	1 05	75	82	1 00	1 10	27.35	30.50
24 .	72	74	90	1 05	75	80	1 00	1 10	24.65	29.50
31 .	67	72	87	1 00	70	77	95	1 05	22.45	28.00
August 7 .	67	72	87	1 00	70	77	95	1 05	25.15	27.00
14 .	67	72	87	1 00	70	77	95	1 05	25.65	29.50
21 .	67	72	87	1 00	70	77	95	1 05	25.75	30.50
28 .	67	72	87	1 00	70	77	95	1 05	25.45	30.50
September 4 .	67	72	87	1 00	70	77	95	1 05	25.95	30.50
11 .	70	75	95	1 05	75	80	1 00	1 10	29.45	33.00
18 .	75	80	1 00	1 10	80	85	1 05	1 15	29.75	35.00
25 .	75	80	1 00	1 10	80	85	1 05	1 15	29.10	36.00
October 2 .	75	80	1 00	1 10	80	85	1 05	1 15	29.00	37.00
9 .	75	80	1 00	1 10	80	85	1 05	1 15	28.35	36.00
16 .	75	80	1 00	1 10	80	85	1 05	1 15	30.25	35.50
23 .	75	80	1 00	1 10	80	85	1 05	1 15	30.85	36.50
30 .	75	80	1 00	1 10	80	85	1 05	1 15	31.80	37.50
November 7 .	76	82	1 04	1 10	82	87	1 10	1 20	34.50	37.50
13 .	76	82	1 04	1 12	82	87	1 10	1 20	33.70	37.00
20 .	76	82	1 04	1 12	82	87	1 10	1 20	35.35	37.50
27 .	76	82	1 04	1 12	82	87	1 10	1 20	36.55	38.50
December 4 .	76	82	1 04	1 12	82	87	1 10	1 20	36.65	39.50
11 .	76	82	1 04	1 12	82	87	1 10	1 20	34.50	38.50
18 .	76	82	1 04	1 12	82	87	1 10	1 20	35.50	38.00
26 .	77	85	1 05	1 12	85	90	1 10	1 20	37.25	39.00

<sup>1</sup> New Bedford basis.

Prices of Staple Cotton Yarns in the United States on the First of Each Quarter during Years 1911 to 1923, inclusive



The above chart is based on the table on the following page.



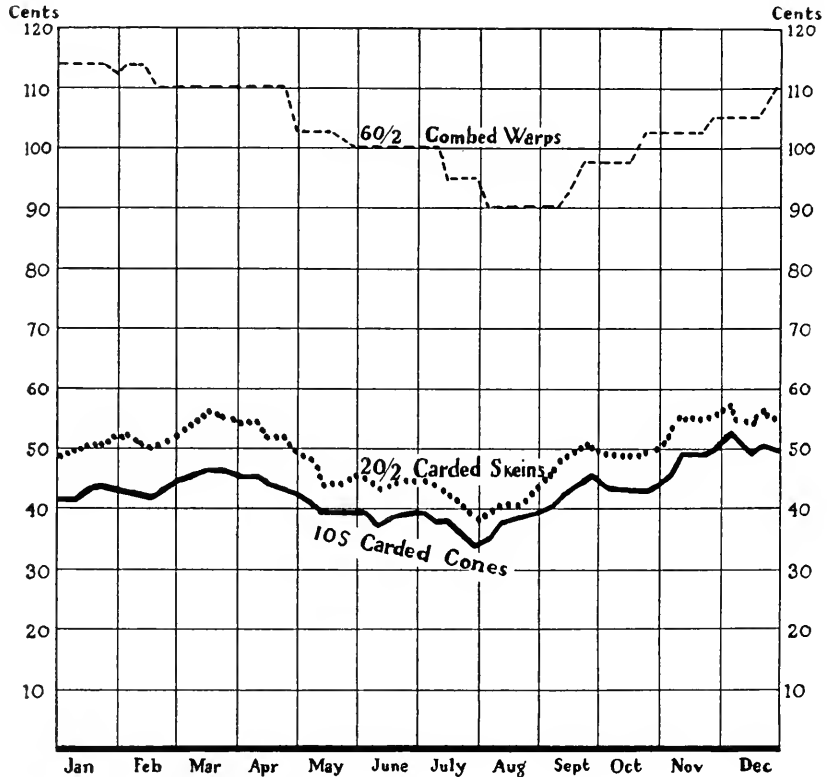
# Prices of Staple Cotton Yarns in the United States on First of Each Quarter during Years 1912 to 1923, inclusive

[Prices are per pound]

The prices given below were taken partly from New York Daily News Record and partly from Textile World

DATE	10s Single Southern Carded Frame Cones	20/2 Southern Carded Skeins	60/2 Eastern Combed Peeler Warps
January 1, 1912 . . . . .	\$0 16 to \$0 16 $\frac{1}{2}$	\$0 18 $\frac{1}{2}$ to \$0 18 $\frac{3}{4}$	\$0 53 to \$0 55
April 1, 1912 . . . . .	18 to 18 $\frac{1}{2}$	21 $\frac{1}{2}$ to 22	57 to 58
July 1, 1912 . . . . .	18 to 18 $\frac{1}{2}$	21 $\frac{1}{2}$ to 22	59 to 61
October 1, 1912 . . . . .	20 to 20 $\frac{1}{2}$	22 to 22 $\frac{1}{2}$	59 to 63
January 1, 1913 . . . . .	22 to 22 $\frac{1}{2}$	24 to 24 $\frac{1}{2}$	61 to 66
April 1, 1913 . . . . .	21 to 21 $\frac{1}{2}$	23 $\frac{1}{2}$ to 24	59 to 63
July 1, 1913 . . . . .	21 to 21 $\frac{1}{2}$	22 to 22 $\frac{1}{2}$	53 to 59
October 1, 1913 . . . . .	22 to 22 $\frac{1}{2}$	25 to 25 $\frac{1}{2}$	55 to 61
January 1, 1914 . . . . .	21 $\frac{1}{2}$ to 21 $\frac{3}{4}$	23 to 23 $\frac{1}{2}$	53 to 59
April 1, 1914 . . . . .	21 to 21 $\frac{1}{4}$	23 to 23 $\frac{1}{2}$	53 to 59
July 1, 1914 . . . . .	21 to 21 $\frac{1}{2}$	22 to 22 $\frac{1}{2}$	51 to 57
October 1, 1914 . . . . .	15 $\frac{3}{4}$ to 17 $\frac{1}{2}$	17 to 18	50 to 56
January 1, 1915 . . . . .	14 to 15	16 $\frac{1}{2}$ to 17 $\frac{1}{2}$	44 to 49
April 1, 1915 . . . . .	15 to 16 $\frac{1}{2}$	16 $\frac{1}{2}$ to 18	48 to 53
July 1, 1915 . . . . .	15 $\frac{1}{2}$ to 17 $\frac{1}{2}$	17 to 19	51 to 56
October 1, 1915 . . . . .	18 to 19	21 to 22	56 to 59
January 1, 1916 . . . . .	20 to 22	25 to 27	61 to 66
April 1, 1916 . . . . .	20 $\frac{1}{2}$ to 22	26 to 27	66 to 71
July 1, 1916 . . . . .	23 $\frac{1}{4}$ to 24	28 to 31	76 to 81
October 1, 1916 . . . . .	29 to 31	33 $\frac{1}{2}$ to 35	97 to 1 02
January 1, 1917 . . . . .	35 to 37	39 to 41	1 10 to 1 15
April 1, 1917 . . . . .	34 to 36	36 $\frac{1}{2}$ to 38	93 to 95
July 1, 1917 . . . . .	44 to 46	43 to 46	1 10 to 1 15
October 1, 1917 . . . . .	41 to 42	42 to 45	1 10 to 1 15
January 1, 1918 . . . . .	50 to 52	55 to 58	1 20 to 1 25
April 1, 1918 . . . . .	60 to 61	67 to 68	1 20 to 1 25
July 1, 1918 . . . . .	61 to 63	71 to 73	1 20 to 1 25
October 1, 1918 . . . . .	61 to 63	73 to 75	1 20 to 1 25
January 1, 1919 . . . . .	50 to 53	62 to 65	1 20 to 1 30
April 1, 1919 . . . . .	41 to 43	46 to 50	1 05 to 1 10
July 1, 1919 . . . . .	55 to 57	67 to 69	1 55 to 1 60
October 1, 1919 . . . . .	60 to 63	70 to 72 $\frac{1}{2}$	1 90 to 1 95
January 1, 1920 . . . . .	69 to 73	84 to 85	3 50
April 1, 1920 . . . . .	74 to 77	90 to 92	3 75
July 1, 1920 . . . . .	70 to 75	80 to 85	2 50
October 1, 1920 . . . . .	42 to 45	50 to 55	1 50
January 1, 1921 . . . . .	28 to 29	31 to 32	85
April 1, 1921 . . . . .	21 to 22	23 to 24	80
July 1, 1921 . . . . .	21 to 22	22 $\frac{1}{2}$ to 23	85 to 95
October 1, 1921 . . . . .	35 to 37	36 $\frac{1}{2}$ to 38	1 10
January 1, 1922 . . . . .	30 $\frac{1}{2}$ to 31	33 $\frac{1}{2}$ to 34	1 10
April 1, 1922 . . . . .	28 $\frac{1}{2}$	31 $\frac{1}{2}$	1 05
July 1, 1922 . . . . .	35	39	1 05
October 1, 1922 . . . . .	34 to 34 $\frac{1}{2}$	38 to 38 $\frac{1}{2}$	1 00
January 1, 1923 . . . . .	41 $\frac{1}{2}$ to 42	49 to 49 $\frac{1}{2}$	1 10 to 1 18
April 1, 1923 . . . . .	45 $\frac{1}{2}$	54	1 05 to 1 15
July 1, 1923 . . . . .	39 to 39 $\frac{1}{2}$	44 $\frac{1}{2}$ to 45	95 to 1 05
October 1, 1923 . . . . .	44	49 $\frac{1}{2}$ to 50	95 to 1 00
January 1, 1924 . . . . .	50	55	1 05 to 1 15

Prices of Staple Cotton Yarns in the United States during the Year 1923



The above chart is based on the table on the following page.

# Prices of Staple Cotton Yarns in the United States Week by Week, during the Year 1923

[Prices are cents per pound]

Southern yarns from Daily News Record; Eastern from Textile World

DATE		10s Single Southern Carded Frame Cones	20/2 Southern Carded Skeins	60/2 Eastern Combed Peeler Warps
January	2	41½ to 42	48½ to 49	110 to 118
	8	41½ to 42	49 to 49½	110 to 118
	15	42½ to 43	50	110 to 118
	22	43 to 43½	50½ to 51½	110 to 118
February	29	43	51 to 52	110 to 115
	5	42½ to 43	51 to 52	110 to 118
	12	42½	50 to 50½	110 to 118
	19	42	50	105 to 115
March	26	43½	51½	105 to 115
	5	45	53	105 to 115
	12	46	54 to 55	105 to 115
	19	46½	55 to 56	105 to 115
April	26	46½	55	105 to 115
	2	45½	54	105 to 115
	9	45½	54	105 to 115
	16	44	51 to 51½	105 to 115
May	23	43½	51	105 to 115
	30	42½	49½	100 to 105
	7	41	47	100 to 105
	14	39 to 39½	44½ to 45	100 to 105
June	21	39 to 39½	44 to 45	98 to 105
	28	39½	45 to 45½	95 to 105
	4	39½	45	95 to 105
	11	37½	43	95 to 105
July	18	38½ to 39	44 to 44½	95 to 105
	25	39 to 39½	44½ to 45	95 to 105
	2	39 to 39½	44½ to 45	95 to 105
	9	38	43½	95 to 105
August	16	38	42½	90 to 100
	23	36 to 36½	40½ to 41	90 to 100
	30	34	37 to 38	90 to 100
	6	35½ to 36	39 to 39½	85 to 95
September	13	38½	41	85 to 95
	20	39	41	85 to 95
	27	39 to 39½	42½	85 to 95
	4	40½	45	85 to 95
October	10	42½	48	85 to 95
	17	43½	49	90 to 95
	24	45½	51	95 to 100
	1	44	49½ to 50	95 to 100
November	8	43½	48½ to 49	95 to 100
	15	43½	48½ to 49	95 to 100
	22	43½	49½ to 50	100 to 105
	29	44	50	100 to 105
December	5	46	52	100 to 105
	12	49	55	100 to 105
	19	49	55	100 to 105
	26	50	55	100 to 110
	3	52	57	100 to 110
	10	50½	55	100 to 110
	17	49½	54	100 to 110
	24	50½	56	100 to 110
	29	50	55	105 to 115

## World's 1922 Comparative Prices of Cotton Gray Cloths

[Cents per pound at current exchange]

Textile Division, Bureau of Foreign and Domestic Commerce

WEEK ENDING —	New York	Manchester	Calcutta	Osaka	Shanghai	Madras	Bombay	Lodz
January 7	43.88	41.72	48.47	44.39	52.84	—	—	—
14	43.48	41.83	47.91	43.76	53.09	—	—	—
21	43.04	40.62	47.85	43.61	— <sup>1</sup>	51.91 <sup>2</sup>	42.80 <sup>2</sup>	—
28	42.08	39.83	47.70	42.31	— <sup>1</sup>	—	—	—
February 4	41.27	39.39	48.08	41.43	— <sup>1</sup>	—	—	—
11	40.17	38.91	48.70	39.89	51.48	—	—	—
18	39.73	38.32	48.32	40.17	51.56	54.12 <sup>2</sup>	42.65 <sup>2</sup>	—
25	40.19	39.31	48.60	40.47	50.96	—	—	—
March 4	40.67	39.94	47.82	39.22	48.93	—	—	—
11	40.61	39.17	48.61	39.45	50.27	—	—	—
18	40.24	38.72	48.41	40.23	50.41	55.07 <sup>2</sup>	42.71 <sup>2</sup>	—
25	40.04	39.60	49.37	41.29	51.44	—	—	—
April 1	39.61	38.43	49.01	42.91	51.74	—	—	—
8	39.83	38.66	50.15	43.04	51.54	—	—	—
15	39.48	37.06	49.85	41.88	51.32	54.02 <sup>2</sup>	42.91 <sup>2</sup>	—
22	40.16	39.63	49.91	40.92	— <sup>3</sup>	—	—	—
29	40.01	39.19	49.95	40.85	— <sup>3</sup>	—	—	—
May 6	40.99	40.04	50.31	40.39	— <sup>3</sup>	—	—	—
13	41.91	42.06	52.52	41.04	— <sup>3</sup>	56.98 <sup>2</sup>	44.81 <sup>2</sup>	—
20	42.88	43.16	52.99	41.63	57.25	—	—	—
27	42.95	43.03	52.71	41.62	54.70	—	—	—
June 3	43.14	42.91	52.12	42.57	—	—	—	—
10	43.14	43.38	52.00	43.01	56.39	—	—	—
17	44.42	44.29	51.85	43.45	56.43	59.72 <sup>2</sup>	45.51 <sup>2</sup>	—
24	44.93	44.71	51.12	43.96	54.55	—	—	—
July 1	45.36	43.77	51.16	44.79	54.41	—	—	—
8	45.28	45.29	51.62	45.75	53.89	—	—	68.93
15	46.47	44.22	50.66	45.65	53.01	60.06 <sup>2</sup>	46.27 <sup>2</sup>	62.82
22	46.55	43.75	50.84	45.48	53.21	—	—	66.96
29	46.19	42.80	50.20	44.99	53.29	—	—	—
August 5	46.03	42.13	50.27	44.58	53.12	59.17	46.40	—
12	45.41	42.06	50.40	44.53	51.73	58.49	46.52	—
19	44.70	41.37	50.47	43.34	52.33	60.97	46.59	—
26	45.70	43.59	50.37	43.53	52.11	58.96	46.49	—
September 2	45.90	41.85	50.11	42.51	52.19	58.81	46.25	—
9	45.98	41.69	50.37	41.33	52.35	58.52	45.59	—
16	46.39	41.36	49.97	39.88	51.28	58.43	—	—
23	47.14	41.00	49.28	38.80	51.48	—	44.06	—
30	47.59	40.62	— <sup>1</sup>	37.54	51.75	57.30	—	—
October 7	47.51	40.32	— <sup>1</sup>	38.30	—	57.86	43.23	53.08
14	48.48	40.63	48.75	—	51.91	56.92	43.36	—
21	49.29	41.16	49.14	39.25	50.68	57.24	42.58	60.99
28	50.71	42.08	48.26	39.55	50.94	58.11	41.37	60.89
November 4	51.48	42.44	49.10	39.48	49.94	57.81	40.69	—
11	51.61	43.39	49.18	40.28	48.86	57.69	40.76	58.22
18	53.19	43.62	49.01	40.03	47.73	58.46	41.31	—
25	52.75	43.64	48.61	40.20	48.78	—	41.71	—
December 2	52.51	43.84	48.98	40.40	47.96	59.83	41.09	71.69
9	52.28	43.46	49.26	40.67	48.47	59.95	40.39	68.91
16	51.68	44.10	50.27	41.10	48.53	61.18	41.21	—
23	52.70	43.86	49.83	42.30	48.51	59.12	41.25	—
30	53.46	43.03	—	—	—	—	—	—
Weekly average	45.21	41.62	49.76	41.76	51.72	57.95	43.40	63.61

<sup>1</sup> Holidays.<sup>2</sup> Monthly average.<sup>3</sup> Auction abandoned.

# World's 1923 Comparative Prices of Cotton Gray Cloths

[Cents per pound at current exchange]

Textile Division, Bureau of Foreign and Domestic Commerce

WEEK ENDING —		New York	Manchester	Calcutta	Osaka	Shanghai	Madras	Bombay
January	6	53.86	44.15	50.46	— <sup>1</sup>	— <sup>1</sup>	— <sup>1</sup>	— <sup>1</sup>
	13	53.79	44.17	50.91	46.10	49.40	— <sup>1</sup>	39.10
	20	54.26	45.21	53.17	46.54	50.25	57.21	41.98
	27	55.15	45.35	56.58	46.57	50.93	59.87	44.20
February	3	55.75	45.05	54.88	46.43	50.23	58.08	42.86
	10	55.59	45.66	54.69	— <sup>2</sup>	— <sup>1</sup>	58.97	42.80
	17	55.66	45.69	54.55	45.50	— <sup>1</sup>	58.60	42.84
	24	55.81	45.98	53.01	45.81	— <sup>1</sup>	58.91	42.54
March	3	56.20	45.96	53.37	46.31	53.03	58.61	— <sup>1</sup>
	10	56.80	45.96	52.23	45.96	52.96	58.55	42.50
	17	57.08	46.27	51.97	45.92	53.17	58.13	42.50
	24	57.28	46.42	50.67	45.44	53.48	57.62	42.20
	31	56.90	46.21	50.73	45.68	55.79	— <sup>2</sup>	42.00
April	7	56.25	46.01	— <sup>2</sup>	45.35	53.83	57.54	41.66
	14	55.64	45.69	49.25	45.54	53.14	— <sup>2</sup>	40.26
	21	55.46	45.21	49.94	45.16	53.22	58.47	40.47
	28	54.60	45.07	49.94	45.23	53.21	— <sup>2</sup>	40.37
May	5	53.68	44.45	50.03	45.11	54.12	— <sup>2</sup>	40.33
	12	52.01	43.55	49.19	44.87	54.70	61.95	39.98
	19	50.78	43.68	48.72	44.94	55.44	61.38	39.04
	26	50.59	43.76	47.87	45.34	55.94	61.17	38.96
June	2	50.25	44.56	47.80	45.04	55.60	61.19	39.00
	9	49.78	44.34	47.35	45.15	54.37	59.74	38.99
	16	49.94	45.55	47.35	44.89	— <sup>1</sup>	60.26	38.99
	23	49.66	44.54	47.02	44.71	55.06	59.31	39.05
	30	49.45	44.61	46.61	44.35	55.91	58.99	38.74
July	7	48.38	43.57	46.29	43.54	53.59	58.37	38.48
	14	48.06	43.04	46.78	43.06	53.47	58.26	39.60
	21	46.92	43.04	46.45	42.17	52.77	58.84	39.61
	28	46.11	41.89	46.27	40.13	52.53	58.68	39.45
August	4	45.85	40.27	45.51	40.21	51.55	57.75	39.18
	11	45.81	41.54	45.44	39.68	51.45	57.32	39.11
	18	46.16	41.60	45.43	38.27 <sup>3</sup>	52.38	57.39	39.10
	25	47.48	42.19	45.02	38.47 <sup>3</sup>	52.78	56.82	38.84
September	1	47.62	41.55	45.16	40.17	52.49	57.09	38.88
	8	49.59	41.44	45.07	40.07	53.32	57.06	38.79
	15	52.44	43.55	47.78	40.14	54.08	57.50	38.74
	22	53.55	43.97	50.45	40.98	53.74	58.52	38.81
	29	54.55	44.17	50.40	43.06	— <sup>2</sup>	58.67	39.58
October	6	54.02	44.01	51.51	42.96	53.14	58.31	39.63
	13	52.56	43.22	51.60	43.49	53.32	58.97	39.83 <sup>3</sup>
	20	53.27	43.76	— <sup>1</sup>	43.59	53.12	59.21	39.90
	27	53.28	44.16	— <sup>1</sup>	44.32	53.23	59.21	40.15
November	3	53.71	44.84	53.42	45.00	53.71	59.28	40.37
	10	55.41	46.32	54.00	45.83	54.07	58.43	39.86 <sup>3</sup>
	17	56.98	47.11	52.59	45.53	55.02	58.29	39.48
	24	57.12	48.14	55.68	46.67	55.61	59.00	41.06
December	1	57.98	48.55	57.19	48.33 <sup>3</sup>	55.02	59.92	42.54
	8	58.67	49.11	57.12	47.94	55.70	60.40	43.44
	15	57.97	47.10	56.52	46.69	56.30	60.87	43.05 <sup>3</sup>
	22	57.91	48.27	56.16	47.43 <sup>3</sup>	56.06	60.28	42.12
	29	57.91	48.32	— <sup>1</sup>	— <sup>1</sup>	55.56	— <sup>1</sup>	42.28
Weekly average		53.11	44.76	50.42	44.35	53.65	58.88	40.49

<sup>1</sup> Holidays.

<sup>2</sup> Prices not received.

<sup>3</sup> Cable quotations.

# **Prices of Gray Cloths and Spot Cotton, Week by Week, during 1923**

[Prices are cents per yard]  
Compiled by Daily News Record

DATE		64 x 60 27-Inch 7.60 Yards.	68 x 72 39-Inch 4.75 Yards.	80 x 80 39-Inch 4.00 Yards.	48 x 48 37-Inch 4.00 Yards.	48 x 40 36-Inch 5.50 Yards.	96 x 100 40-Inch 7.00 Yards.	Cotton Mid-up Spot, N. Y.
January	2	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	26.45
	9	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	26.60
	16	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	12	8 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	27.40
	23	8	12	14 <sup>1</sup> / <sub>2</sub>	12	9	19	28.75
	30	8	11	14 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	9	19	28.10
February	6	8	11 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	19	28.65
	13	8	12	14 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	9	19	28.05
	20	8	12	14 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	9	19	29.00
	27	8	12	14 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	9	19	29.85
March	6	8 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>	19	31.00
	13	8 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	19	31.25
	20	8 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	19	31.10
	27	8 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>2</sub>	12	9	19	29.35
April	3	8	12	14 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>2</sub>	29.30
	10	8	12	14	11 <sup>3</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>2</sub>	29.70
	17	7 <sup>7</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>2</sub>	13 <sup>3</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	19	28.75
	24	7 <sup>3</sup> / <sub>4</sub>	12	13 <sup>1</sup> / <sub>2</sub>	11	8 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>2</sub>	28.05
May	1	7 <sup>1</sup> / <sub>2</sub>	12	13 <sup>1</sup> / <sub>2</sub>	10 <sup>3</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>2</sub>	27.50
	8	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	12	10 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	19	26.05
	15	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	19	26.20
	22	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	10	8 <sup>1</sup> / <sub>2</sub>	19	28.65
	29	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	19	28.90
June	5	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	10	8	18 <sup>3</sup> / <sub>4</sub>	28.00
	12	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	8	18	29.70
	19	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	18 <sup>3</sup> / <sub>4</sub>	27.80
	26	6 <sup>7</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	18	28.25
July	3	6 <sup>3</sup> / <sub>4</sub>	11	12	10 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	18	27.25
	10	6 <sup>3</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>4</sub>	10	7 <sup>1</sup> / <sub>2</sub>	18	27.65
	17	6 <sup>1</sup> / <sub>2</sub>	10 <sup>3</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	10	7 <sup>1</sup> / <sub>2</sub>	18	27.35
	24	6 <sup>1</sup> / <sub>2</sub>	10	11 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	18	24.65
	31	6 <sup>1</sup> / <sub>2</sub>	10	11 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	18	22.45
August	7	6 <sup>1</sup> / <sub>2</sub>	10 <sup>3</sup> / <sub>4</sub>	11	9 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	18	25.15
	14	6 <sup>3</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>2</sub>	11	10	7 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	25.65
	21	6 <sup>1</sup> / <sub>2</sub>	10 <sup>3/<sub>4</sub></sup>	12	10 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	25.75
	28	6 <sup>1</sup> / <sub>2</sub>	11	12 <sup>1</sup> / <sub>2</sub>	10 <sup>3/<sub>4</sub></sup>	7 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	25.45
September	4	6 <sup>1</sup> / <sub>2</sub>	11	12	11	8 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	25.95
	11	7 <sup>1</sup> / <sub>2</sub>	11	13	11 <sup>3</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	29.45
	18	7 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	13	12	9 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	29.75
	25	7 <sup>1</sup> / <sub>2</sub>	12	14	11 <sup>7</sup> / <sub>8</sub>	9	18 <sup>1</sup> / <sub>2</sub>	29.10
October	2	7 <sup>1</sup> / <sub>2</sub>	11 <sup>5</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	11 <sup>5</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>4</sub>	18	29.00
	9	7 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	18 <sup>3</sup> / <sub>4</sub>	28.35
	16	7 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	13 <sup>3</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	18 <sup>3</sup> / <sub>4</sub>	30.25
	23	7 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	13 <sup>3</sup> / <sub>4</sub>	11 <sup>3</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	18 <sup>3</sup> / <sub>4</sub>	30.85
	30	7 <sup>1</sup> / <sub>2</sub>	11 <sup>7</sup> / <sub>8</sub>	13 <sup>3</sup> / <sub>4</sub>	11 <sup>7</sup> / <sub>8</sub>	9	18 <sup>3</sup> / <sub>4</sub>	31.80
November	7	7 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	14	12 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	18 <sup>1</sup> / <sub>2</sub>	34.50
	13	7 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	14 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	33.70
	20	8	12 <sup>3</sup> / <sub>4</sub>	14 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	35.35
	27	8	13	15	13	9 <sup>3</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	36.55
December	4	8 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>	13	9 <sup>3</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	36.65
	11	8 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	34.50
	18	7 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>	12 <sup>3</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	18 <sup>3</sup> / <sub>4</sub>	35.50
	26	8	12 <sup>1</sup> / <sub>2</sub>	15 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	18 <sup>3</sup> / <sub>4</sub>	37.25

## Average Yearly Print Cloth Prices

Compiled by Harry Riemer, Cotton Goods Editor, Daily News Record

YEAR	25-Inch 56 x 44 10.55 Yards	27-Inch 64 x 60 7.60 Yards	38½-Inch 44 x 40 8.20 Yards	38½-Inch 60 x 48 6.25 Yards	38½-Inch 64 x 60 5.35 Yards	39-Inch 68 x 72 4.75 Yards	39-Inch 72 x 76 4.25 Yards	39-Inch 80 x 80 4.00 Yards	Average Cotton Goods Prices <sup>1</sup>	New York Middling Spot Cotton
Pre-war average (1911-12-13)	2.492	3.308	3.237	4.243	4.852	5.470	6.158	6.942	8.054	12.55
1914	2.299	3.071	3.146	3.774	4.465	5.111	5.709	6.403	7.851	11.81
1915	2.152	2.900	2.800	3.544	4.050	4.673	5.359	5.989	7.338	10.08
1916	3.059	4.118	4.178	5.200	6.031	6.781	7.370	8.011	9.860	14.45
1917	5.113	6.656	6.307	8.046	9.399	10.701	11.853	12.795	15.074	23.80
1918 <sup>2</sup>	8.232	11.513	10.300	14.029	15.152	18.338	20.332	20.930	23.533	31.59
1919	8.010	9.869	9.300	12.650	13.700	16.695	19.258	21.670	21.912	32.37
1920	9.848	12.336	12.100	15.848	17.280	18.788	21.649	23.915	26.000	33.79
1921	3.953	5.079	4.855	6.565	7.710	8.809	9.635	11.387	13.018	15.05
1922	5.076	6.823	6.276	7.962	8.943	10.008	11.622	12.605	15.090	22.44
1923	5.426	7.461	7.052	8.835	10.198	11.721	12.646	13.608	17.145	29.30

<sup>1</sup> This average includes, among others, eight print cloths, five sheetings, four drills, four standard colored goods, four bleached goods and two ducks.<sup>2</sup> In June, 1918, the government announced a list of maximum prices on cotton goods. These prices were really in effect till the end of the year. After the armistice in November, however, business almost ceased and there was practically no market. This may explain some figures which would otherwise seem irregular.

## Average Yearly Standard Colored Goods and Bleached Goods Prices

Compiled by Harry Riemer, Cotton Goods Editor, Daily News Record

Clothes	Pre-war Average (1911-12-13)	1914	1915	1916	1917	1918 <sup>1</sup>	1919	1920	1921	1922	1923
Standard 2.20 denim . . . . .	11.485	11.500	11.250	18.714	24.277	34.500	30.062	38.250	15.666	19.486	23.826
Standard fine chambray, about 5.00 yard . . . . .	6.625	6.750	6.500	8.000	13.500	19.875	20.500	34.620	12.375	14.281	14.230
Standard 3.80 work shirt cham- bray . . . . .	6.916	6.166	6.277	9.140	15.210	22.650	17.444	25.200	11.156	13.929	15.403
27-inch Eastern Standard staple gingham . . . . .	6.194	5.846	5.943	7.244	11.000	17.694	18.178	19.305	12.329	13.820	14.395
Standard 8-ounce ticking . . . .	13.138	13.125	12.200	16.454	27.071	39.034	33.400	28.030	19.250	23.156	26.740
Standard branded bleached mus- lin, Class A . . . . .	8.432	8.125	8.160	10.050	14.800	24.000	25.045	33.500	16.684	17.278	18.497
Standard branded bleached mus- lin, Class B . . . . .	7.235	7.660	6.875	8.960	12.475	20.570	21.300	21.300	13.330	13.812	15.014
10/4 bleached wide sheeting, Class A . . . . .	25.857	26.668	27.151	31.585	40.862	64.205	67.819	71.042	50.730	52.091	57.484
10/4 bleached wide sheeting, Class B . . . . .	22.308	23.188	23.629	27.447	35.674	58.290	60.594	64.200	46.215	47.104	51.346

<sup>1</sup> In June, 1918, the government announced a list of maximum prices on cotton goods. These prices were really in effect till the end of the year. After the armistice in November, however, business almost ceased, and there was practically no market. This may explain some figures which would otherwise seem irregular.



# New Bedford Fine Cotton Goods Production and Sales<sup>1</sup>

[Number of pieces]

Bureau of the Census, Department of Commerce

## Production

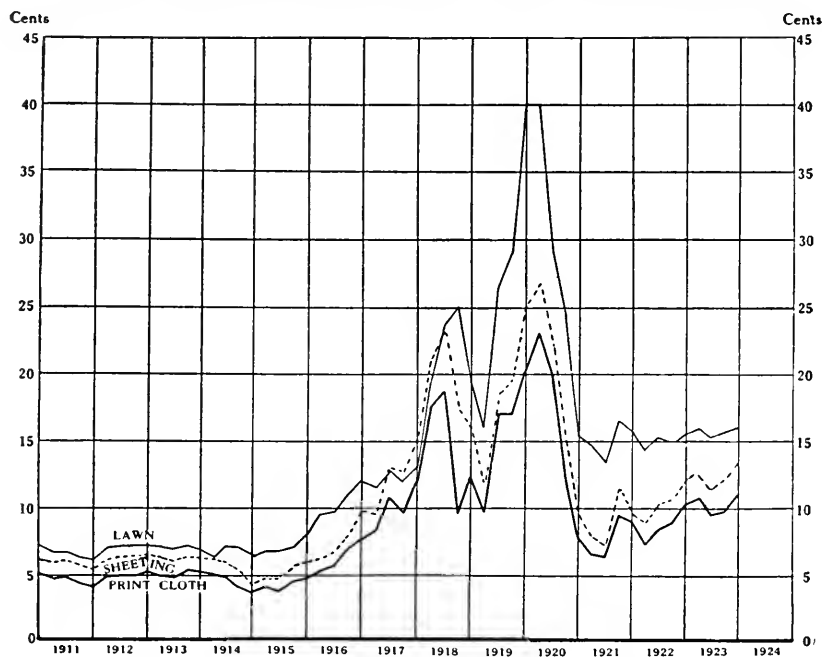
	1918	1919	1920	1921	1922	1923	1924
January . . . . .	—	461,288	455,932	163,111	320,719	401,786	464,408
February . . . . .	—	304,458	361,088	241,211	339,348	399,024	409,377
March . . . . .	—	340,245	415,755	330,160	397,800	497,511	420,622
April . . . . .	421,908	331,328	394,422	432,244	366,323	423,201	—
May . . . . .	497,649	373,371	261,228	351,053	378,974	491,660	—
June . . . . .	452,293	302,522	384,444	393,526	404,202	458,605	—
July . . . . .	422,724	381,771	398,038	374,653	375,944	378,326	—
August . . . . .	497,533	426,212	355,788	359,703	410,858	430,072	—
September . . . . .	418,406	370,322	310,531	386,929	414,782	430,361	—
October . . . . .	415,352	418,917	261,339	394,864	372,996	444,079	—
November . . . . .	369,013	398,362	204,764	373,943	411,527	461,806	—
December . . . . .	412,810	493,481	187,525	449,913	435,785	448,701	—

## Sales

	1918	1919	1920	1921	1922	1923	1924
January . . . . .	—	103,448	414,411	565,511	229,380	556,440	250,360
February . . . . .	—	64,888	123,342	179,919	202,208	383,818	191,278
March . . . . .	—	369,172	192,299	287,897	319,917	440,066	201,281
April . . . . .	482,365	1,060,880	235,573	339,970	273,626	215,503	—
May . . . . .	438,117	776,982	41,522	323,132	347,368	180,914	—
June . . . . .	329,877	470,555	55,130	331,815	518,068	265,859	—
July . . . . .	251,127	563,514	53,448	306,589	93,964	211,147	—
August . . . . .	309,580	210,368	63,148	521,458	322,396	444,491	—
September . . . . .	303,068	499,945	61,410	537,402	574,439	438,968	—
October . . . . .	157,357	640,361	46,321	314,858	666,787	327,694	—
November . . . . .	73,004	239,493	24,156	191,440	393,453	390,943	—
December . . . . .	38,798	360,522	89,550	440,578	391,480	271,549	—

<sup>1</sup> Reported by 24 identical mills in the New Bedford district, representing about 50 per cent of the fine cotton industry in New England and from 20 to 30 per cent throughout the United States.

**Prices of Staple Cotton Cloths in the United States on First of Each Quarter during Years 1911 to 1923 inclusive**



The above chart is based on the table on the following page.

# **Prices of Staple Cotton Cloths in the United States on First of Each Quarter during Years 1912 to 1923, inclusive**

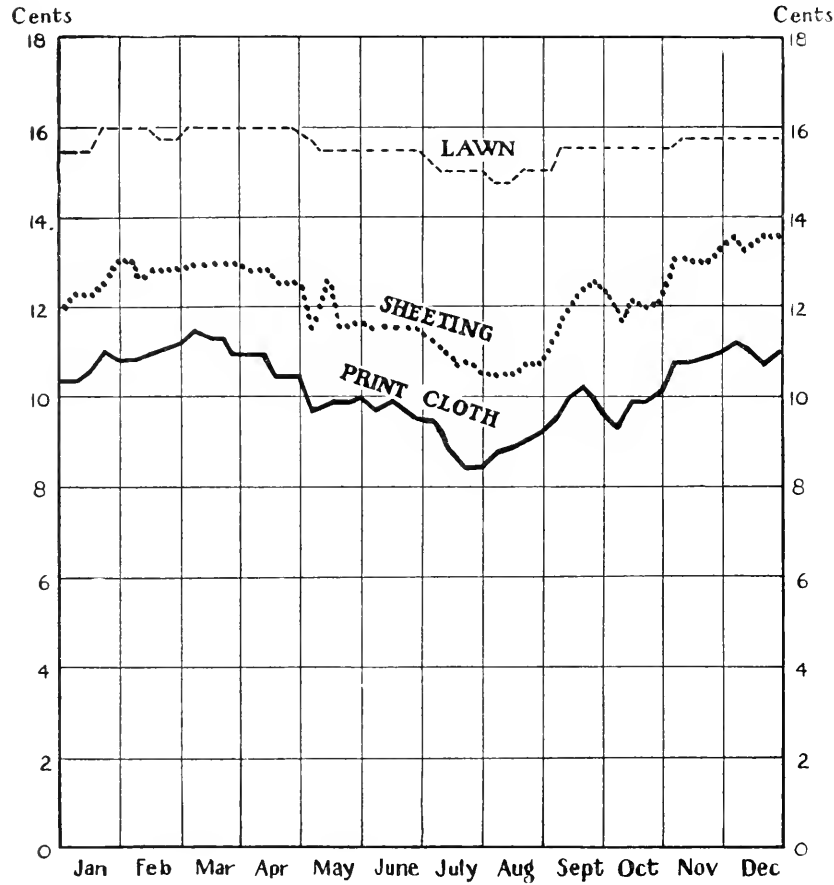
[Prices are per linear yard]

Prices are from the New York Daily News Record, except the prices of fine lawns which were compiled by C. H. Pope & Co., cloth brokers, up to January 1, 1923.

DATE	Print Cloth 38½", 64 x 60 5.35 Yards per Pound	Brown Sheeting 36", 56 x 60 1 Yards per Pound	Fine Lawn 40", 88 x 80 8.50 Yards per Pound
January 1, 1912	\$0 04 <sup>1</sup> / <sub>16</sub>	\$0 05 <sup>3</sup> / <sub>8</sub> to \$0 05 <sup>1</sup> / <sub>2</sub>	\$0 06 <sup>1</sup> / <sub>4</sub>
April 1, 1912	04 <sup>1</sup> / <sub>8</sub>	06 <sup>1</sup> / <sub>8</sub> to 06 <sup>1</sup> / <sub>2</sub>	07
July 1, 1912	05	06 <sup>1</sup> / <sub>8</sub> to 06 <sup>1</sup> / <sub>2</sub>	07 <sup>1</sup> / <sub>8</sub>
October 1, 1912	05	06 <sup>3</sup> / <sub>8</sub> to 06 <sup>1</sup> / <sub>2</sub>	07 <sup>1</sup> / <sub>8</sub>
January 1, 1913	05 <sup>3</sup> / <sub>16</sub>	06 <sup>1</sup> / <sub>8</sub>	07 <sup>1</sup> / <sub>8</sub>
April 1, 1913	05	06 <sup>1</sup> / <sub>8</sub> to 06 <sup>3</sup> / <sub>8</sub>	07 <sup>1</sup> / <sub>8</sub>
July 1, 1913	04 <sup>1</sup> / <sub>8</sub>	06 to 06 <sup>1</sup> / <sub>8</sub>	07
October 1, 1913	05 <sup>3</sup> / <sub>16</sub>	06 <sup>3</sup> / <sub>8</sub>	07 <sup>1</sup> / <sub>8</sub>
January 1, 1914	05 <sup>3</sup> / <sub>16</sub>	06 <sup>1</sup> / <sub>8</sub> to 06 <sup>3</sup> / <sub>8</sub>	07
April 1, 1914	05 <sup>1</sup> / <sub>8</sub>	06 <sup>1</sup> / <sub>8</sub> to 06 <sup>1</sup> / <sub>4</sub>	06 <sup>1</sup> / <sub>4</sub>
July 1, 1914	04 <sup>1</sup> / <sub>8</sub>	06	07 <sup>1</sup> / <sub>8</sub>
October 1, 1914	04	05 <sup>1</sup> / <sub>2</sub>	07 <sup>1</sup> / <sub>8</sub>
January 1, 1915	03 <sup>1</sup> / <sub>16</sub>	04 <sup>1</sup> / <sub>8</sub> to 04 <sup>1</sup> / <sub>2</sub>	06 <sup>3</sup> / <sub>4</sub>
April 1, 1915	04	01 <sup>3</sup> / <sub>4</sub> to 04 <sup>1</sup> / <sub>2</sub>	06 <sup>3</sup> / <sub>4</sub>
July 1, 1915	03 <sup>3</sup> / <sub>4</sub>	04 <sup>1</sup> / <sub>2</sub>	06 <sup>3</sup> / <sub>4</sub>
October 1, 1915	04 <sup>1</sup> / <sub>8</sub>	05 <sup>5</sup> / <sub>8</sub> to 05 <sup>3</sup> / <sub>4</sub>	07
January 1, 1916	04 <sup>3</sup> / <sub>4</sub>	06	08
April 1, 1916	05 <sup>5</sup> / <sub>16</sub>	06 <sup>1</sup> / <sub>8</sub> to 06 <sup>3</sup> / <sub>8</sub>	09 <sup>1</sup> / <sub>2</sub>
July 1, 1916	05 <sup>5</sup> / <sub>16</sub>	06 <sup>5</sup> / <sub>8</sub> to 06 <sup>3</sup> / <sub>4</sub>	09 <sup>3</sup> / <sub>4</sub>
October 1, 1916	06	08	11
January 1, 1917	07 <sup>5</sup> / <sub>8</sub>	09 <sup>3</sup> / <sub>4</sub>	12
April 1, 1917	08 <sup>1</sup> / <sub>4</sub>	09 <sup>1</sup> / <sub>2</sub> to 09 <sup>3</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>
July 1, 1917	10 <sup>3</sup> / <sub>4</sub>	13	12 <sup>1</sup> / <sub>2</sub>
October 1, 1917	09 <sup>3</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>2</sub> to 12 <sup>3</sup> / <sub>4</sub>	12
January 1, 1918	12	15 <sup>1</sup> / <sub>4</sub>	13
April 1, 1918	17 <sup>1</sup> / <sub>2</sub>	21	19 <sup>1</sup> / <sub>2</sub>
July 1, 1918	18 <sup>3</sup> / <sub>4</sub>	23	23 <sup>1</sup> / <sub>2</sub>
October 1, 1918	09 <sup>3</sup> / <sub>4</sub>	17 <sup>1</sup> / <sub>2</sub>	25 <sup>1</sup> / <sub>2</sub>
January 1, 1919	12 <sup>1</sup> / <sub>4</sub>	16	19 <sup>1</sup> / <sub>2</sub>
April 1, 1919	09 <sup>3</sup> / <sub>4</sub>	12	16
July 1, 1919	17	18 <sup>1</sup> / <sub>2</sub>	26 <sup>1</sup> / <sub>2</sub>
October 1, 1919	17	19 <sup>1</sup> / <sub>2</sub> to 20	29
January 1, 1920	20 <sup>1</sup> / <sub>4</sub>	25	40
April 1, 1920	23	26 <sup>1</sup> / <sub>2</sub> to 27	40
July 1, 1920	20	22 <sup>1</sup> / <sub>2</sub>	29
October 1, 1920	12 <sup>1</sup> / <sub>2</sub>	15 <sup>1</sup> / <sub>2</sub>	24 <sup>1</sup> / <sub>2</sub>
January 1, 1921	08	09 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>
April 1, 1921	06 <sup>5</sup> / <sub>8</sub>	08	14 <sup>1</sup> / <sub>2</sub>
July 1, 1921	06 <sup>5</sup> / <sub>8</sub>	07 <sup>1</sup> / <sub>4</sub>	13 <sup>1</sup> / <sub>2</sub>
October 1, 1921	09 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub>
January 1, 1922	09	09 <sup>3</sup> / <sub>4</sub>	15 <sup>3</sup> / <sub>4</sub>
April 1, 1922	07 <sup>3</sup> / <sub>8</sub>	09	14 <sup>1</sup> / <sub>2</sub>
July 1, 1922	08 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>4</sub>
October 1, 1922	09	10 <sup>5</sup> / <sub>8</sub> to 10 <sup>3</sup> / <sub>4</sub>	15
January 1, 1923	10 <sup>3</sup> / <sub>8</sub>	12 to 12 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>
April 1, 1923	10 <sup>7</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>4</sub>	16
July 1, 1923	09 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>4</sub>
October 1, 1923	09 <sup>3</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>4</sub>	15 <sup>1</sup> / <sub>2</sub>
January 1, 1924	11	13 <sup>1</sup> / <sub>2</sub>	15 <sup>3</sup> / <sub>4</sub>

<sup>1</sup> Government-fixed price.

Prices of Staple Cotton Cloths in the United States during the Year 1923



The above chart is based on the table on the following page.

# Prices of Staple Cotton Cloths in the United States, Week by Week, during the Year 1923

[Prices are cents per linear yard]

From the New York Daily News Record

DATE, 1923		Print Cloth 38 $\frac{1}{2}$ ", 64 x 60 5.35 Yards per Pound	Brown Sheeting 36", 56 x 60 4 Yards per Pound	Fine Lawn 40", 88 x 80 8.50 Yards per Pound
January	2	10 $\frac{3}{8}$	12	15 $\frac{1}{2}$
	9	10 $\frac{3}{8}$	12 $\frac{1}{4}$	15 $\frac{1}{2}$
	16	10 $\frac{3}{8}$	12 $\frac{1}{4}$	15 $\frac{1}{2}$
	23	11	12 $\frac{1}{2}$	16
February	30	10 $\frac{7}{8}$	13	16
	6	10 $\frac{7}{8}$	13	16
	13	11	12 $\frac{3}{4}$	16
	20	11 $\frac{1}{8}$	12 $\frac{3}{4}$	15 $\frac{3}{4}$
March	27	11 $\frac{1}{4}$	12 $\frac{1}{4}$	15 $\frac{1}{4}$
	6	11 $\frac{1}{4}$	12 $\frac{1}{4}$	16
	13	11 $\frac{3}{8}$	12 $\frac{1}{4}$	16
	20	11 $\frac{3}{8}$	12 $\frac{1}{4}$	16
April	27	11	12 $\frac{1}{4}$	16
	3	11	12 $\frac{1}{4}$	16
	10	11	12 $\frac{1}{4}$	16
	17	10 $\frac{1}{2}$	12 $\frac{1}{2}$	16
May	24	10 $\frac{1}{2}$	12	16
	1	10 $\frac{1}{2}$	12 $\frac{1}{4}$	15 $\frac{1}{4}$
	8	9 $\frac{3}{4}$	11 $\frac{1}{2}$	15 $\frac{3}{4}$
	15	9 $\frac{3}{4}$	12	15 $\frac{1}{2}$
June	22	9 $\frac{7}{8}$	11 $\frac{1}{2}$	15 $\frac{1}{2}$
	29	10	11 $\frac{1}{2}$	15 $\frac{1}{2}$
	5	9 $\frac{3}{4}$	11 $\frac{1}{2}$	15 $\frac{1}{2}$
	12	9 $\frac{7}{8}$	11 $\frac{1}{2}$	15 $\frac{1}{2}$
July	19	9 $\frac{3}{4}$	11 $\frac{1}{2}$	15 $\frac{1}{2}$
	26	9 $\frac{5}{8}$	11 $\frac{1}{2}$	15 $\frac{1}{2}$
	3	9 $\frac{1}{2}$	11 $\frac{1}{4}$	15 $\frac{1}{4}$
	10	9	11	15
August	17	8 $\frac{3}{4}$	10 $\frac{3}{4}$	15
	24	8 $\frac{1}{2}$	10 $\frac{1}{2}$	15
	31	8 $\frac{1}{2}$	10 $\frac{1}{2}$	15
	7	8 $\frac{3}{4}$	10 $\frac{1}{2}$	14 $\frac{3}{4}$
September	14	8 $\frac{7}{8}$	10 $\frac{1}{2}$	14 $\frac{1}{4}$
	21	9 $\frac{1}{8}$	10 $\frac{3}{4}$	15
	28	9 $\frac{1}{4}$	10 $\frac{3}{4}$	15
	4	9 $\frac{2}{5}$	11	15
October	11	10	11 $\frac{3}{4}$	15 $\frac{1}{4}$
	18	10 $\frac{1}{4}$	12 $\frac{1}{4}$	15 $\frac{1}{2}$
	25	10	12 $\frac{1}{2}$	15 $\frac{1}{2}$
	2	9 $\frac{5}{8}$	12 $\frac{1}{4}$	15 $\frac{1}{2}$
November	9	9 $\frac{5}{8}$	11 $\frac{3}{4}$	15 $\frac{1}{2}$
	16	9 $\frac{7}{8}$	12 $\frac{1}{4}$	15 $\frac{1}{4}$
	23	9 $\frac{7}{8}$	12	15 $\frac{1}{2}$
	30	10 $\frac{1}{8}$	12 $\frac{1}{4}$	15 $\frac{1}{2}$
December	7	10 $\frac{3}{4}$	13	15 $\frac{1}{4}$
	13	10 $\frac{3}{4}$	13	15 $\frac{1}{4}$
	20	10 $\frac{5}{8}$	13	15 $\frac{1}{4}$
	27	11	13 $\frac{1}{4}$	15 $\frac{3}{4}$
December	4	11 $\frac{1}{4}$	13 $\frac{1}{2}$	15 $\frac{3}{4}$
	11	11 $\frac{1}{8}$	13 $\frac{1}{4}$	15 $\frac{1}{4}$
	18	10 $\frac{3}{4}$	13 $\frac{1}{2}$	15 $\frac{3}{4}$
	26	11	13 $\frac{1}{2}$	15 $\frac{1}{4}$

## Wage Rates paid by Cotton Mills of Lancashire, England, since 1853

The table below gives the wage rates paid under the standard lists of Lancashire, in terms of percentage of the basic list prices. Basic list prices are indicated by 100; rates 5 per cent above list are expressed by 105; rates 5 per cent below list are expressed by 95, etc.

END OF YEAR —	COTTON SPINNING		Cotton Weaving Blackburn <sup>1</sup> and Uniform Lists
	Bolton List	Oldham List	
1853 . . . . .	No list	No list	Blackburn list adopted + 10
1854-57 . . . . .	No list	No list	100
1858 . . . . .	List adopted	No list	100
1859 . . . . .	100	No list	100
1860 . . . . .	105	No list	105
1861-65 . . . . .	100	No list	100
1866 . . . . .	105	No list	100
1867 . . . . .	100	No list	List revised
1868 . . . . .	100	No list	100
1869 . . . . .	95	No list	95
1870 . . . . .	95	No list	100
1871 . . . . .	100	No list	100
1872-73 . . . . .	105	No list	100
1874 . . . . .	100	No list	100
1875 . . . . .	105	No list	100
1876 . . . . .	105	List adopted	100
1877 . . . . .	100	95	100
1878 . . . . .	100	85	90
1879 . . . . .	90	80	85
1880 . . . . .	95	85	85
1881-82 . . . . .	95	90	90
1883 . . . . .	95	90	85
1884 . . . . .	95	90	90
1885-87 . . . . .	90	85	90
1888-89 . . . . .	95	90	90
1890 . . . . .	100	90	90
1891 . . . . .	100	95	90
1892 . . . . .	100	95	Uniform list adopted - 10
1893-98 . . . . .	100	92.09	90
1899 . . . . .	100	95	92.5
1900-04 . . . . .	105	100	92.5
1905 . . . . .	105	100	97.5
1906 . . . . .	105	105	100
1907-08 . . . . .	110	110	100
1909-11 . . . . .	105	105	100
1912 . . . . .	105	105	105
1913 . . . . .	105	105	105
1914 . . . . .	105	105	105
1915 . . . . .	110	110	105
1916 . . . . .	115	115	110
1917 . . . . .	140	140	140
1918 . . . . .	215	215	215
1919 . . . . .	245	245	245
1920 . . . . .	315 <sup>2</sup>	315 <sup>2</sup>	315 <sup>3</sup>
1921 . . . . .	245	245	245
1922 . . . . .	195	195	195
1923 . . . . .	195	195	195

<sup>1</sup> Blackburn list succeeded by Uniform list in 1892.

<sup>2</sup> Strippers and grinders, blowing-room operatives, and leading men in cotton rooms received in 1920 an additional 10 per cent on wages realized after the addition of the 70 per cent of the list.

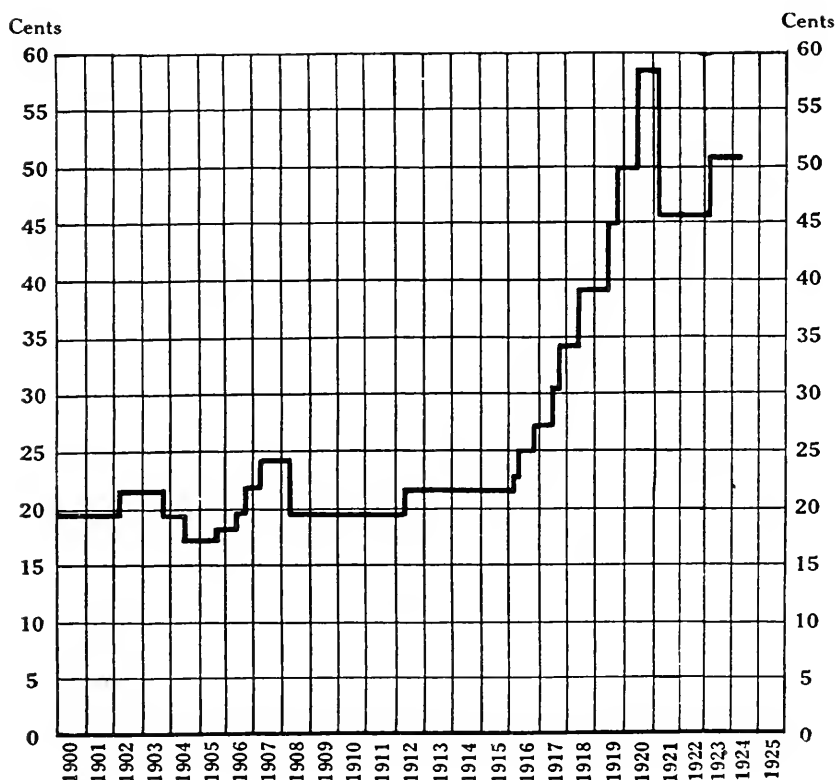
<sup>3</sup> Tapers, dry tapers, warp dressers, and loom overlookers received an advance in 1920 of only 55 per cent of list, instead of the 70 per cent which other operatives received. In 1921 these operatives were reduced only 55 per cent instead of the 70 per cent by which other workers were cut down.

# General Wage Changes in New Bedford since 1870

PERIOD	Advance or Reduction from Previous Rate (Per Cent)	Percentage of January, 1870, Rate	Percentage of Pre-war Rate
January, 1870, to March, 1870 . . . . .	—	100.00	—
March, 1870, to December, 1873 . . . . .	+10	110.00	—
December, 1873, to December, 1875 . . . . .	—10	99.00	—
December, 1875, to August, 1878 . . . . .	—10	89.10	—
August, 1878, to January, 1880 . . . . .	—10	80.19	—
January, 1880, to April, 1880 . . . . .	+10	88.20	—
April, 1880, to April, 1884 . . . . .	+10	97.02	—
April, 1884, to April, 1885 . . . . .	—10	87.31	—
April, 1885, to April, 1886 . . . . .	—10	78.57	—
April, 1886, to April, 1888 . . . . .	+10	86.42	—
April, 1888, to August, 1892 . . . . .	+5	90.74	—
August, 1892, to December, 1892 . . . . .	+3	93.46	—
December, 1892, to September, 1893 . . . . .	+7	100.00	—
September, 1893, to August, 1894 . . . . .	—10@15	87.50	—
August, 1894, to April, 1895 . . . . .	—5	83.12	—
April, 1895, to January, 1898 . . . . .	+5	87.27	—
January, 1898, to April, 1899 . . . . .	—10	78.54	—
April, 1899, to December, 1899 . . . . .	+10	86.39	—
December, 1899, to April, 1902 . . . . .	+10	95.02	—
April, 1902, to December, 1903 . . . . .	+10	104.52	—
December, 1903, to July, 1906 . . . . .	—10 <sup>1</sup>	95.02	—
July, 1906, to December, 1906 . . . . .	+5	99.77	—
December, 1906, to May, 1907 . . . . .	+7½	107.25	—
May, 1907, to April, 1908 . . . . .	+10	117.97	—
April, 1908, to March, 1912 . . . . .	—10	106.17	—
March, 1912, to January, 1916 . . . . .	+10	116.78	100.00
January, 1916, to April, 1916 . . . . .	+5	122.61	105.00
April, 1916, to November, 1916 . . . . .	+10	134.87	115.50
November, 1916, to June, 1917 . . . . .	+10	148.35	127.05
June, 1917, to November, 1917 . . . . .	+10	163.18	139.76
November, 1917, to June, 1918 . . . . .	+10	179.49	153.74
June, 1918, to June, 1919 . . . . .	+17½	210.90	180.64
June, 1919, to December, 1919 . . . . .	+15	242.53	207.74
December, 1919, to June, 1920 . . . . .	+12½	272.84	233.71
June, 1920, to January, 1921 . . . . .	+15	313.76	268.77
January, 1921, to April, 1923 . . . . .	—22½	243.16	208.30
April, 1923, to — . . . . .	+12½	273.56	235.74

<sup>1</sup> Approximate reduction of 10 per cent to scale of December, 1899.

## Wage Rates paid for weaving Print Cloths in Fall River



The above chart, based on the table at the top of the following page, shows the fluctuations in the amount paid by Fall River print cloth manufacturers to their weavers for weaving  $47\frac{1}{2}$  yards of 28", 64 x 64, 7-yard print cloths. Wage rates of other classes of operatives, per hour or per piece, fluctuated in about the same ratio as those of weavers during the period covered. Accordingly this chart may be taken as indicating the general changes in the hourly or piece wage rates of Fall River mill-workers.



# Wage Rates paid for weaving Print Cloths in Fall River

The figures below are the prices paid for weaving 47½ yards of 28-inch, 64 x 64, 7-yard print cloths.

PERIOD	Wage Rate	Advance or Reductions from Previous Rate (Per Cent)	Percentage of 1900 Rate	Percentage of Pre-war Rate
December, 1899, to March, 1902 .	\$0.1980	+10	100	—
March, 1902, to November, 1903 .	2178	+10	110	—
November, 1903, to July, 1904 .	1980	—9½	100	—
July, 1904, to October, 1905 .	1732	—12½	87½	—
October, 1905, to July, 1906 .	1861	+7½	94	—
July, 1906, to November, 1906 .	1980	+6¼	100	—
November, 1906, to May, 1907 .	2178	+10	110	—
May, 1907, to May, 1908 .	2396	+10	121	—
May, 1908, to March, 1912 .	1966	—17½	99	—
March, 1912, to January, 1916 .	2163	+10	109	100.00
January, 1916, to May, 1916 .	2271	+5	115	105.00
May, 1916, to December, 1916 .	2498	+10	126	115.50
December, 1916, to June, 1917 .	2748	+10	139	127.05
June, 1917, to December, 1917 .	3023	+10	154	139.76
December, 1917, to June, 1918 .	3401	+12½	172	157.23
June, 1918, to June, 1919 .	3911	+15	198	180.81
June, 1919, to December, 1919 .	4498	+15	227	207.93
December, 1919, to June, 1920 .	5060	+12½	256	233.92
June, 1920, to January, 1921 .	5819	+15	293	269.01
January, 1921, to April, 1923 .	4510	—22½	228	208.48
April, 1923, to — .	5074	+12½	257	234.54

# Average Cash Dividends of New Bedford and Fall River Cotton Mills

Sanford & Kelly of New Bedford and G. M. Haffards & Co. of Fall River

YEAR	New Bedford	Fall River
1910	9.59 per cent on \$31,865,100 capital	6.80 per cent on \$26,856,700 capital
1911	5.50 per cent on \$36,821,300 capital	4.96 per cent on \$27,561,700 capital
1912	4.40 per cent on \$37,126,300 capital	4.25 per cent on \$27,561,700 capital
1913	5.63 per cent on \$38,925,000 capital	6.87 per cent on \$30,179,100 capital
1914	4.76 per cent on \$39,225,000 capital	4.03 per cent on \$30,349,700 capital
1915	7.83 per cent on \$39,725,000 capital	3.77 per cent on \$30,349,700 capital
1916	7.33 per cent on \$40,675,000 capital	8.01 per cent on \$30,486,700 capital
1917	16.47 per cent on \$49,012,300 capital	13.08 per cent on \$33,111,700 capital
1918	12.66 per cent on \$50,656,300 capital	18.02 per cent on \$34,111,700 capital
1919	13.30 per cent on \$50,572,500 capital	14.46 per cent on \$34,111,700 capital
1920	26.17 per cent on \$50,966,500 capital	32.77 per cent on \$33,860,000 capital
1921	9.19 per cent on \$59,374,000 capital	8.01 per cent on \$38,610,000 capital
1922	9.72 per cent on \$61,735,200 capital	9.60 per cent on \$37,210,000 capital
1923	6.96 per cent on \$72,251,900 capital	7.81 per cent on \$44,666,700 capital

**Estimated Cost, as of January 1, 1911, and January 1, 1924, of erecting and equipping Complete a Spinning Mill of 50,000 Spindles making No. 16 Carded Yarns for Hosiery Trade finished on Cones and Skeins**

Compiled by Lockwood, Greene & Company, Inc.

SPINNING MILL	1911	1924
Mill buildings (including warehouse) . . .	\$252,800 00	\$508,707 00
Fire protection . . . . .	15,400 00	30,363 00
Lighting . . . . .	8,400 00	16,511 00
Heating and humidifying . . . . .	17,600 00	27,550 00
Shafting . . . . .	7,100 00	8,550 00
Motor and power wiring . . . . .	56,000 00	93,240 00
Belting . . . . .	8,800 00	15,000 00
Supplies and miscellaneous equipment . . .	40,100 00	80,000 00
Power plant complete . . . . .	198,300 00	360,360 00
Textile machinery and erection . . . . .	496,400 00	976,180 00
Freights . . . . .	15,800 00	17,460 00
Engineering and contingencies . . . . .	111,800 00	213,392 00
	\$1,228,500 00	\$2,347,313 00

Above buildings of slow-burning construction, three stories for spinning, one story for picking, and four stories for storehouse for a six months' supply.

Sprinkler and hydrants for fire protection, electric lights, steam coils for heating, individual heads for humidifiers.

Power houses with steam turbines.

Drives are individual motors on pickers, two and four frame for roving and spinning, and group drive for balance of machinery.

Estimates based on being built in New England and machinery prices obtained from machinery builders.

**Estimated Cost as of January 1, 1911, and January 1, 1924, of erecting and equipping a Weaving Shed containing 1,280 Automatic Looms to weave Print Cloths 38½ Inches Wide, 5.35 Yard 64 x 60 Threads per Inch and of Carded No. 28.5 Warp and No. 39 Filling**

Compiled by Lockwood, Greene & Company, Inc.

WEAVE SHED	1911	1924
Manufacturing buildings, including plumbing . . . . .	\$180,500 00	\$369,560 00
Fire protection, including tank, hose houses, hydrants and sprinklers . . . . .	10,400 00	19,101 00
Lighting, including transformers and wiring . . . . .	4,100 00	8,051 00
Heating and humidifying . . . . .	18,500 00	29,165 00
Shafting . . . . .	11,400 00	13,775 00
Motors and power wiring . . . . .	16,700 00	26,670 00
Belting . . . . .	5,600 00	9,900 00
Supplies . . . . .	5,000 00	10,000 00
Power plant complete . . . . .	110,000 00	192,993 00
Textile machinery . . . . .	243,700 00	380,630 00
Freight . . . . .	5,000 00	8,730 00
Engineering contingencies . . . . .	61,100 00	106,857 00
	\$672,000 00	\$1,175,432 00

Buildings of slow-burning construction. Shed one story with basement and saw-tooth roof. Sprinkler and hydrants for fire protection, electric lights, steam coils for heating, individual heads for humidity. Power house with steam turbine. Group drive with shafting in basement.

Figured that yarns would be received on beams and cones or tubes.

Goods woven on automatic looms.

Same equipment figured for both 1911 and 1924, but with prices changed according to years.

Estimates based on being built in New England and machinery prices obtained from machinery builders.

# **Cost of Principal Machines in Cotton Manufacturing Equipment as of January 1 of Each Year from 1910 to 1924**

Compiled by Lockwood, Greene & Company, Inc.

DATE	Finisher Picker	Card	Comber	Drawing Frame per Delivery	Roving Frame per Delivery	Spinning Frame per Spindle	Plain Loom	Mill Con- struc- tion per Square Foot
1910	\$750 00	\$600 00	\$1,250 00	\$60 00	\$6 50	\$2 60	\$83 00	\$0 96
1911	700 00	550 00	1,250 00	60 00	5 60	2 50	83 00	94
1912	750 00	600 00	1,250 00	55 00	5 75	2 50	83 00	94
1913	700 00	550 00	1,200 00	55 00	5 50	2 50	83 00	94
1914	675 00	500 00	1,150 00	55 00	5 00	2 00	83 00	93
1915	700 00	525 00	1,300 00	60 00	5 50	2 20	83 00	94
1916	750 00	650 00	1,300 00	60 00	6 75	2 65	85 00	1 06
1917	1,000 00	850 00	1,400 00	75 00	8 50	3 90	101 00	1 36
1918	1,280 00	975 00	1,800 00	90 00	10 00	4 50	152 00	1 66
1919	1,600 00	1,200 00	2,000 00	115 00	13 00	5 50	164 50	2 00
1920	1,760 00	1,325 00	2,400 00	125 00	14 50	6 00	213 50	2 92
1921	1,920 00	1,600 00	2,500 00	160 00	18 00	7 00	213 50	2 50
1922	1,600 00	1,325 00	2,250 00	125 00	14 50	6 00	147 00	1 85
1923	1,440 00	1,100 00	2,250 00	100 00	11 50	5 00	135 00	2 10
1924	1,600 00 <sup>1</sup>	1,200 00 <sup>1</sup>	2,250 00	115 00 <sup>1</sup>	13 00 <sup>1</sup>	5 50 <sup>1</sup>	152 00	1 90

<sup>1</sup> A reduction of practically 10 per cent on these items went into effect January 15, 1924.

NOTE. — The above prices for mill construction are for a three-story mill building with unfinished basement of slow-burning construction, exclusive of service equipment. Unit costs of construction are based on a total floor area of 200,000 square feet.

Estimates based on being built in New England and machinery prices obtained from machinery builders.

# **Estimated Costs per Spindle of Four Different Mills Each of 50,000 Spindles Complete as of January 1 for Years 1910 to 1924**

Compiled by Lockwood, Greene & Company, Inc.

YEAR	SPINNING MILLS		SPINNING AND WEAVING MILLS	
	No. 1 Hosiery Yarns Carded No. 16	No. 2 Hosiery Yarns Combed No. 17.5	No. 3 Print Cloths 38.5 wide— 5.35 Yard 64 x 60 Carded No. 28.5 Warp Carded No. 39 Filling	No. 4 Lawns 38.5"— 6.40 Yard 104 x 112 Combed No. 60 Warp Combed No. 90 Filling
1910 . . . . .	\$25 02	\$32 15	\$28 28	\$24 46
1911 . . . . .	24 48	31 46	27 67	23 93
1912 . . . . .	24 55	31 55	27 75	24 00
1913 . . . . .	24 36	31 30	27 53	23 81
1914 . . . . .	23 21	29 82	26 23	22 68
1915 . . . . .	24 14	31 02	27 28	23 59
1916 . . . . .	26 78	34 42	30 27	26 18
1917 . . . . .	33 29	42 78	37 63	32 54
1918 . . . . .	40 07	51 50	45 29	39 17
1919 . . . . .	49 08	63 08	55 48	47 98
1920 . . . . .	64 63	83 05	73 05	63 17
1921 . . . . .	61 37	78 87	69 36	59 99
1922 . . . . .	47 61	61 19	53 82	46 54
1923 . . . . .	45 97	59 08	51 96	44 94
1924 . . . . .	46 76	60 09	52 85	45 71

No. 1. Three-story mill, one-story picker house, four-story storehouse. Yarn made of double roving and finished on cones and in skeins.

No. 2. Four-story mill, two-story picker house, four-story storehouse. Yarn made of double roving and finished on cones and in skeins.

No. 3. Spinning mill four stories, weave shed one story and basement and sawtooth roof. Yarns made of double roving and woven on automatic looms.

No. 4. Spinning mill three stories, weave shed one story and basement and sawtooth roof. Yarn made of double roving and woven on plain looms.

All buildings of slow-burning construction. Storehouses figured on a six months' supply. All power plants have complete steam turbine unit. The mill heated by steam coils and humidified by individual heads.

The drives are figured as individual motors on pickers, two and four frame for roving and spinning, and group drives for balance of machinery.

Estimates based on being built in New England and machinery prices as obtained from machinery builders.

# United States Exports of Cotton Textile Machinery, 1923

Bureau of Foreign and Domestic Commerce, Department of Commerce

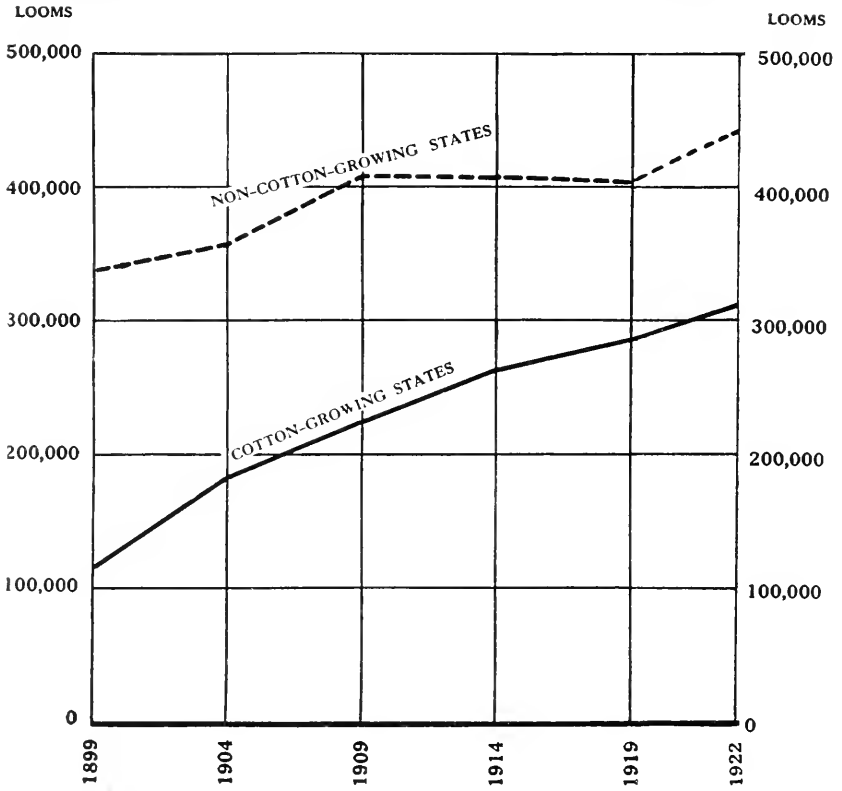
COUNTRIES OF DESTINATION	Knitting Machines (Number)	Cotton Carding Machines (Number)	Cotton Spinning and Twisting Machines (Number)	Cotton Looms (Number)	Other Cotton Machinery (Pounds)
Austria . . . . .	1	0	0	0	0
Belgium . . . . .	30	0	1	0	38,136
Denmark . . . . .	1	0	0	0	0
Finland . . . . .	22	0	0	0	0
France . . . . .	873	11	21	22	80,935
Germany . . . . .	196	0	1	1	29,904
Greece . . . . .	0	0	0	0	0
Italy . . . . .	473	59	589	0	128,754
Malta, Gozo and Cy- prus Islands . . . . .	1	0	0	0	0
Netherlands . . . . .	0	0	0	0	9,059
Norway . . . . .	11	0	0	0	0
Poland and Danzig . . . . .	2	0	25	0	7,504
Portugal . . . . .	37	0	0	0	0
Spain . . . . .	51	6	25	0	16,949
Rumania . . . . .	0	0	0	0	0
Sweden . . . . .	5	0	0	0	2,755
Switzerland . . . . .	0	0	0	0	0
Ukraine . . . . .	3	0	0	0	0
England . . . . .	2,982	0	1	3	163,768
Scotland . . . . .	12	0	0	0	0
Ireland . . . . .	0	0	0	0	126
Canada-Maritime Prov- inces . . . . .	2	1	0	2	167,575
Canada-Quebec and Ontario . . . . .	453	33	35	340	1,232,824
Canada-Prairie Prov- inces . . . . .	14	0	0	0	1,042
Canada-British Col- umbia and Yukon . . . . .	4	0	0	1	0
Costa Rica . . . . .	0	0	0	0	291
Haiti . . . . .	0	0	0	0	19,720
Guatemala . . . . .	1	0	0	0	0
Honduras . . . . .	1	0	0	0	0
Salvador . . . . .	0	0	0	0	308
Panama . . . . .	2	0	0	0	0
Mexico . . . . .	150	4	5	2	84,799
Newfoundland and Lab- rador . . . . .	0	0	0	0	396

# United States Exports of Cotton Textile Machinery, 1923 — (Concluded)

Bureau of Foreign and Domestic Commerce, Department of Commerce

COUNTRIES OF DESTINATION	Knitting Machines (Number)	Cotton Carding Machines (Number)	Cotton Spinning and Twisting Machines (Number)	Cotton Looms (Number)	Other Cotton Machinery (Pounds)
Bermuda . . . . .	2	0	0	0	0
Trinidad and Tobago . . . . .	2	0	0	0	0
Cuba . . . . .	1	0	0	0	8
Virgin Islands of United States . . . . .	1	0	0	0	0
Argentina . . . . .	1,579	0	0	0	2,612
Brazil . . . . .	344	8	0	0	27,246
Dutch Guiana . . . . .	1	0	0	0	0
British Guiana . . . . .	0	0	0	0	0
Chile . . . . .	58	0	0	0	2,290
Columbia . . . . .	40	0	0	108	46,182
Ecuador . . . . .	0	1	0	0	6,888
Peru . . . . .	40	0	0	0	23,223
Uruguay . . . . .	69	0	0	0	0
Venezuela . . . . .	17	0	0	0	2,198
China . . . . .	185	0	15	81	521,374
Kwangtung, leased ter- ritory . . . . .	3	0	0	0	3,866
Palestine and Syria . . . . .	2	0	0	0	0
Chosen . . . . .	1	0	0	0	1,707
Hongkong . . . . .	275	0	0	0	15,512
Japan . . . . .	211	83	149	1,393	847,802
Siam . . . . .	1	0	0	0	0
Java and Madura . . . . .	0	0	0	0	545
British India . . . . .	17	1	4	24	1,607
Australia . . . . .	205	0	0	1	42,508
New Zealand . . . . .	4	0	0	0	0
Belgian Kongo . . . . .	0	0	0	0	1,755
British South Africa . . . . .	2	0	0	18	1,000
British East Africa . . . . .	1	0	0	0	2,480
Portuguese Africa . . . . .	0	0	0	0	126
Liberia . . . . .	0	0	0	1	0
French Africa . . . . .	0	0	0	0	2,400
Total number . . . . .	8,388	207	872	1,997	3,538,174
Value . . . . .	\$2,298,563	\$217,029	\$599,777	\$554,671	\$1,087,057

### Cotton Looms in Southern and Northern States



The above chart is based on the table on the following page.



# Cotton Looms in Southern and Northern States

The statistics below are from the United States Census reports. The States grouped in those reports under the headings New England, Middle Atlantic and North Central are here considered as Northern; those grouped under the headings South Atlantic, East South Central and West South Central, and all others are considered Southern.

YEAR	Southern States	Northern States
1899 . . . . .	115,750	334,932
1904 . . . . .	183,372	357,538
1909 . . . . .	223,403	409,560
1914 . . . . .	263,683	409,071
1919 . . . . .	287,502	404,667
1922 <sup>1</sup> . . . . .	308,410	441,424

<sup>1</sup> Dockham's Textile Manufacture and Dry Goods Trade, 1922, using same classification.

The 1922 statistics are not strictly comparable with previous years, as Bureau of the Census figures represent the cotton goods industry, while Dockham covers all cotton manufactures.

## Active Cotton Spindles in the United States, by States

From statistics compiled by United States Bureau of the Census

	1918	1919	1920	1921	1922	1923
New England States:						
Maine . . . . .	1,090,684	1,107,052	1,124,822	1,114,020	1,121,527	1,137,651
New Hampshire . . . .	1,435,528	1,433,955	1,436,748	1,428,415	1,376,483	1,384,757
Vermont . . . . .	135,864	141,224	144,808	144,808	144,808	144,808
Massachusetts . . . .	11,312,816	11,376,303	11,560,720	11,582,691	11,235,406	11,222,741
Rhode Island . . . . .	2,675,172	2,671,932	2,658,415	2,766,426	2,746,721	2,837,903
Connecticut . . . . .	1,334,656	1,335,391	1,361,911	1,351,429	1,313,860	1,325,856
Total New England States . . . . .	17,984,720	18,065,857	18,287,424	18,387,789	17,938,805	18,053,716
Other Non-Cotton-growing States:						
New York . . . . .	979,509	976,589	992,678	990,252	963,583	1,000,234
New Jersey . . . . .	487,755	480,367	411,165	421,699	424,591	440,560
Pennsylvania . . . . .	245,864	251,833	242,215	221,311	185,550	164,507
Maryland . . . . .	148,863	140,940	142,792	142,792	112,936	112,024
Indiana . . . . .	81,656	81,256	81,756	80,256	79,256	80,756
Illinois . . . . .	58,355	57,543	57,094	51,640	57,432	58,720
Other . . . . .	26,880	30,310	34,846	42,640	39,420	39,124
Total Other Non-Cotton-growing States . . . . .	2,028,882	2,018,838	1,962,546	1,950,590	1,862,768	1,895,925
Cotton-growing States:						
Virginia . . . . .	522,694	559,490	573,610	585,650	628,538	654,785
North Carolina . . . .	4,570,222	4,770,128	4,953,889	5,152,121	5,251,467	5,463,547
South Carolina . . . .	4,878,396	4,910,205	4,966,460	5,006,258	5,081,609	5,107,038
Georgia . . . . .	2,466,148	2,499,331	2,536,531	2,640,800	2,598,070	2,682,730
Alabama . . . . .	1,168,306	1,174,298	1,212,516	1,281,444	1,281,861	1,294,512
Mississippi . . . . .	155,050	143,874	162,876	159,372	172,612	178,508
Tennessee . . . . .	363,699	368,539	397,329	413,589	424,560	437,168
Kentucky . . . . .	91,528	93,488	95,078	95,288	93,184	92,684
Louisiana . . . . .	96,832	102,944	103,128	103,128	97,128	94,748
Texas . . . . .	132,236	140,054	143,054	166,468	168,192	175,104
Other . . . . .	83,952	83,888	86,512	104,870	108,944	129,536
Total Cotton-growing States . . . . .	14,529,063	14,846,239	15,230,983	15,708,988	15,906,165	16,310,360
Total United States . . . . .	34,542,665	34,930,934	35,480,953	36,047,367	35,707,738	36,260,001

# United States Cotton Spinning Spindles in Place and Active Spindle Hours, by Months

	COTTON SPINNING SPINDLES IN PLACE			ACTIVE SPINDLE HOURS		
	1921-22	1922-23	1923-24	1921-22	1922-23	1923-24
United States:						
August	36,595,232	37,041,472	37,430,195	7,239,214,097	8,029,031,944	7,569,061,615
September	36,617,053	37,062,527	37,491,706	7,392,133,846	7,780,694,800	7,482,060,995
October	36,636,525	37,091,164	37,550,250	7,583,584,015	8,279,416,547	8,381,886,213
November	36,688,606	37,152,233	37,585,049	7,711,203,426	8,728,478,519	8,014,579,167
December	36,737,181	37,185,351	37,635,709	7,734,752,961	8,235,857,302	7,139,371,847
January	36,834,446	37,219,867	37,740,454	7,928,774,814	9,274,139,548	8,448,247,467
February	36,844,893	37,281,827	37,742,143	7,122,980,860	8,449,558,695	7,304,102,954
March	36,857,877	37,317,396	-	7,769,741,174	9,535,670,166	-
April	36,874,309	37,280,909	-	6,642,139,932	8,780,378,777	-
May	36,876,547	37,316,792	-	7,496,733,393	9,302,814,957	-
June	36,881,751	37,358,248	-	7,647,810,265	8,391,259,603	-
July	36,945,551	37,408,689	-	7,039,545,093	7,143,800,590	-
Cotton-growing States:						
August	15,859,712	16,078,796	16,483,657	3,627,302,416	4,398,229,720	4,178,136,766
September	15,877,997	16,100,945	16,560,409	3,792,438,037	4,357,887,912	4,397,323,767
October	15,892,013	16,106,644	16,638,075	3,855,725,173	4,568,100,117	4,809,617,872
November	15,922,974	16,153,311	16,688,957	4,039,364,599	4,691,405,379	4,643,228,818
December	15,942,218	16,171,957	16,747,046	3,830,693,420	4,240,503,889	4,067,109,646
January	16,018,533	16,223,993	16,812,906	4,190,496,957	5,002,912,284	5,121,637,404
February	16,025,890	16,274,772	16,849,641	3,878,261,718	4,573,349,374	4,422,887,331
March	16,037,419	16,311,880	-	4,248,606,712	5,121,187,097	-
April	16,043,032	16,326,422	-	3,806,051,772	4,803,242,369	-
May	16,047,393	16,350,363	-	4,255,671,132	5,116,920,306	-
June	16,050,840	16,385,263	-	4,282,316,017	4,709,189,700	-
July	16,074,981	16,458,116	-	4,014,184,322	4,193,263,973	-
All other States:						
August	20,735,520	20,962,676	20,946,538	3,611,911,681	3,630,802,224	3,090,924,849
September	20,739,056	20,961,582	20,931,297	3,599,695,809	3,422,806,888	3,084,737,228
October	20,744,512	20,984,520	20,912,175	3,727,858,842	3,711,316,430	3,572,268,341
November	20,765,632	20,998,922	20,896,092	3,651,838,827	4,037,073,140	3,371,350,349
December	20,794,963	21,013,394	20,888,663	3,904,059,541	3,995,353,413	3,072,262,201
January	20,815,913	21,095,874	20,927,548	3,738,277,857	4,271,227,264	3,326,610,063
February	20,819,003	21,007,055	20,892,502	3,244,719,142	3,876,209,321	2,881,215,623
March	20,820,458	21,005,516	-	3,521,134,462	4,414,483,069	-
April	20,831,277	20,954,487	-	2,836,088,160	3,977,136,408	-
May	20,829,154	20,966,429	-	3,241,062,261	4,185,894,651	-
June	20,833,911	20,972,985	-	3,365,494,248	3,682,069,903	-
July	20,870,573	20,950,573	-	3,025,360,771	2,950,536,617	-

# United States Cotton Spinning Spindles in Place and Active Spindle Hours, by States

	COTTON SPINNING SPINDLES IN PLACE		ACTIVE SPINDLE HOURS	
	1921-22	1922-23	1921-22	1922-23
United States	36,945,554	37,408,689	89,308,613,376	101,931,101,448
Cotton-growing States	16,074,981	16,458,116	47,841,112,275	55,776,192,120
New England States	18,856,339	18,930,146	36,783,239,798	41,271,277,895
All Other States	2,014,234	2,020,427	4,684,261,803	4,883,631,433
Alabama	1,300,699	1,330,162	3,696,990,727	4,245,104,857
Connecticut	1,364,656	1,366,668	3,108,875,376	3,393,233,317
Georgia	2,679,374	2,693,535	7,375,764,606	9,318,238,709
Maine	1,146,440	1,140,928	2,630,834,722	2,829,545,069
Massachusetts	11,922,573	11,951,334	23,102,738,622	25,233,380,970
New Hampshire	1,448,660	1,449,700	1,865,087,663	2,451,775,339
New Jersey	433,983	447,152	889,519,940	969,132,896
New York	1,019,528	1,037,418	2,694,140,937	2,826,919,829
North Carolina	5,292,880	5,509,183	16,423,892,613	19,062,834,757
Pennsylvania	236,263	203,305	381,062,659	373,541,443
Rhode Island	2,829,202	2,876,708	5,698,595,899	6,985,333,666
South Carolina	5,090,088	5,132,364	15,645,758,946	17,905,451,588
Tennessee	427,832	438,696	1,215,553,617	1,353,979,885
Virginia	633,870	673,306	1,645,769,955	1,739,555,652
All Other States	1,119,510	1,158,230	2,936,027,389	3,243,073,471

## United States Cotton Spinning Spindles in Place, by States

Textile Division, Bureau of Foreign and Domestic Commerce

Year	Massachusetts	Rhode Island	New Hampshire	Maine	Connecticut	Vermont	New York	New Jersey	Pennsylvania	Maryland
1880	4,236,084	1,764,569	944,053	695,924	936,376	55,081	561,658	232,221	425,391	125,706
1890	5,872,852	1,959,294	1,198,643	892,702	939,155	71,591	629,324	374,442	496,551	161,786
1900	7,932,883	1,976,198	1,249,875	848,377	1,034,916	100,028	764,492	431,730	336,509	154,064
1905	8,388,533	2,055,912	1,332,075	904,490	1,034,915	100,382	878,276	438,372	339,924	154,968
1906	8,790,793	2,130,958	1,296,445	912,593	1,174,527	102,264	896,254	417,679	288,143	131,112
1907	9,167,698	2,231,461	1,357,877	1,007,717	1,268,065	130,752	1,011,368	440,354	400,395	151,384
1908	9,446,380	2,388,105	1,320,503	978,188	1,240,296	107,324	928,316	447,029	268,310	151,000
1909	9,688,637	2,399,440	1,313,581	1,005,258	1,253,582	105,184	942,521	460,888	275,654	152,266
1910	9,703,573	2,412,272	1,440,173	1,037,176	1,282,232	105,184	970,445	463,403	297,799	153,010
1911	10,613,290	2,526,995	1,462,788	1,066,552	1,270,071	105,276	963,969	483,057	280,202	160,114
1912	11,066,846	2,552,743	1,453,778	1,052,674	1,307,907	136,892	925,576	485,176	265,715	158,168
1913	11,075,684	2,533,380	1,469,137	1,096,986	1,308,650	136,304	936,595	476,731	249,857	162,288
1914	11,046,990	2,574,942	1,466,580	1,117,228	1,340,482	136,304	967,578	477,779	252,685	166,240
1915 <sup>1</sup>	10,914,087	2,567,644	1,468,390	1,104,209	1,335,282	136,304	963,748	481,255	259,965	157,380
1916	11,104,810	2,611,553	1,465,013	1,108,790	1,362,186	135,864	913,979	482,831	256,913	151,904
1917	11,280,351	2,653,397	1,459,853	1,099,278	1,372,860	135,864	938,158	491,843	256,314	147,764
1918	11,512,247	2,683,451	1,462,462	1,096,255	1,376,554	135,864	983,893	487,755	262,896	153,531
1919	11,630,397	2,678,180	1,444,074	1,111,940	1,387,517	141,224	980,321	489,647	266,003	145,208
1920	11,758,613	2,675,892	1,443,776	1,127,138	1,392,547	144,808	997,542	417,837	259,715	145,460
1921	11,810,563	2,805,538	1,457,428	1,126,452	1,388,949	144,808	1,017,163	424,145	268,878	142,792
1922	11,922,573	2,829,202	1,448,660	1,146,440	1,364,656	144,808	1,019,528	433,983	236,263	130,024
1923	11,951,334	2,876,708	1,449,700	1,140,928	1,366,668	144,808	1,037,418	447,152	203,305	131,104

<sup>1</sup> Figures for 1915 to 1923 relate to the twelve months ending July 31; those for prior years to the twelve months ending August 31.

# United States Cotton Spinning Spindles in Place, by States — (Concluded)

Textile Division, Bureau of Foreign and Domestic Commerce

YEAR	Alabama	Georgia	Louisiana	Mississippi	North Carolina	South Carolina	Tennessee	Texas	Virginia
1880	49,432	198,656	—	18,568	93,385	82,334	35,736	—	44,340
1890	79,234	445,452	46,200	57,004	337,786	332,784	97,524	15,000	94,294
1900	411,328	815,545	55,000	75,122	1,133,432	1,431,349	123,896	48,756	126,827
1905	738,087	1,316,573	59,052	125,352	1,880,950	2,864,092	153,375	68,170	193,062
1906	870,154	1,573,450	95,200	165,188	2,396,703	3,367,204	258,794	101,759	253,206
1907	904,244	1,682,506	88,724	173,064	2,681,386	3,609,969	253,148	109,892	272,710
1908	939,942	1,792,790	89,552	173,216	2,944,404	3,713,006	265,198	106,924	295,579
1909	984,534	1,831,742	89,152	176,640	3,010,367	3,819,149	272,856	106,528	315,076
1910	968,239	1,833,244	87,070	185,280	3,062,061	3,833,901	272,774	108,778	329,174
1911	967,564	1,980,813	86,588	183,662	3,353,706	4,187,317	253,460	113,100	372,816
1912	985,968	2,025,238	86,088	191,092	3,403,996	4,327,178	254,278	114,352	414,148
1913	1,000,080	2,103,018	86,095	192,306	3,593,999	4,536,353	271,634	123,908	426,920
1914	1,058,685	2,160,571	86,095	190,216	3,813,940	4,632,204	296,620	124,628	477,886
1915 <sup>1</sup>	1,075,859	2,178,573	79,763	184,636	3,915,842	4,710,826	320,052	124,848	513,434
1916	1,126,846	2,275,929	79,563	166,984	4,053,206	4,743,193	319,148	128,762	516,166
1917	1,136,786	2,422,810	93,408	167,604	4,375,283	4,851,161	350,352	128,112	528,394
1918	1,169,624	2,482,131	96,832	166,932	4,591,026	4,903,840	367,503	132,236	524,194
1919	1,292,294	2,518,059	102,944	155,756	4,789,322	4,955,765	373,695	140,054	580,310
1920	1,215,268	2,542,155	103,128	174,714	4,954,935	4,974,460	399,963	145,054	575,610
1921	1,283,096	2,648,325	103,128	176,778	5,228,266	5,013,538	415,593	166,468	488,982
1922	1,300,699	2,679,379	101,128	172,612	5,292,880	5,090,088	427,832	168,192	633,870
1923	1,330,162	2,693,535	100,748	178,508	5,509,183	5,132,364	438,696	176,444	673,366

<sup>1</sup> Figures for 1915 to 1923 relate to the twelve months ending July 31; those for prior years to the twelve months ending August 31.

### Cotton Mills in Southern States

The statistics given below were compiled by Henry G. Hester, Secretary of the New Orleans Cotton Exchange, who takes a census each year of the Southern cotton manufacturing industry. Unfortunately no such census is taken of the Northern cotton manufacturing industry, and so there are no complete authoritative statistics for the entire country.

STATES	1917	1918	1919	1920	1921	1922	1923
Virginia . . . . .	13	13	14	14	14	14	14
North Carolina . . . . .	366	374	391	414	420	425	437
South Carolina . . . . .	194	196	196	201	201	202	206
Georgia . . . . .	157	157	160	160	161	161	164
Alabama . . . . .	73	74	74	79	81	83	84
Mississippi . . . . .	18	17	17	17	18	18	18
Tennessee . . . . .	25	25	25	25	25	25	28
Kentucky . . . . .	7	7	7	7	6	6	5
Missouri . . . . .	3	3	2	2	2	2	2
Arkansas . . . . .	2	2	2	2	2	2	2
Louisiana . . . . .	5	5	5	5	5	5	5
Texas . . . . .	15	15	16	18	21	22	22
Oklahoma . . . . .	1	1	1	1	1	1	2
Total . . . . .	879	889	910	945	957	966	989

### Looms in Southern Cotton Mills

The statistics given below were compiled by Henry G. Hester, Secretary of the New Orleans Cotton Exchange, who takes a census each year of the number of looms in Southern mills. Unfortunately no such census is taken for Northern mills, so there are no complete authoritative statistics for the entire country. The Southern statistics include all kinds of cotton looms, including those running on narrow fabrics.

STATES	1917	1918	1919	1920	1921	1922	1923
Virginia . . . . .	15,287	15,088	15,828	16,368	17,895	18,487	19,327
North Carolina . . . . .	69,366	70,072	69,611	71,114	73,233	74,554	81,366
South Carolina . . . . .	115,503	115,636	115,491	115,432	115,415	116,949	119,248
Georgia . . . . .	45,126	46,751	46,696	46,939	47,331	47,966	50,019
Alabama . . . . .	21,189	20,171	21,288	21,282	21,957	23,320	23,792
Mississippi . . . . .	4,376	4,144	4,118	4,312	4,152	4,190	4,818
Tennessee . . . . .	5,336	5,308	5,357	5,383	5,990	6,004	6,328
Kentucky . . . . .	1,356	1,353	1,353	1,353	1,295	1,385	1,376
Missouri . . . . .	730	730	730	730	730	730	730
Arkansas . . . . .	276	276	233	161	133	150	150
Louisiana . . . . .	2,018	2,068	2,100	2,018	2,018	2,018	2,229
Texas . . . . .	3,405	3,612	3,766	3,928	4,035	4,419	5,745
Oklahoma . . . . .	—	64	64	64	64	64	564
Total . . . . .	283,968	285,273	286,635	289,084	294,248	300,236	315,692

**World's Cotton Spindles <sup>1</sup>**

As compiled by leading authorities

YEARS	United States Bureau of the Census	Shepperson's Cotton Facts	Comteburo's Cotton Handbook	International Federation of Master Cotton Spinners
1900 . . . . .	105,681,000	—	103,115,000	—
1901 . . . . .	—	107,395,000	102,715,145	—
1902 . . . . .	—	—	111,802,010	—
1903 . . . . .	—	—	112,854,077	—
1904 . . . . .	—	—	114,394,712	—
1905 . . . . .	116,764,438	—	118,254,146	—
1906 . . . . .	120,090,595	—	123,229,202	—
1907 . . . . .	123,332,971	124,320,000	126,594,000	114,096,168
1908 . . . . .	130,054,408	—	129,346,714	128,923,659
1909 . . . . .	133,377,000	—	136,903,457	131,503,062
1910 . . . . .	134,526,000	—	139,608,000	133,384,794
1911 . . . . .	137,792,000	—	141,625,000	137,278,752
1912 . . . . .	140,996,000	—	143,142,000	140,693,103
1913 . . . . .	143,398,000	143,730,000	147,191,000	143,452,659
1914 . . . . .	146,397,000	144,980,000	148,891,000	144,704,012
1915 . . . . .	—	148,226,000	150,737,000	—
1916 . . . . .	—	149,785,000	151,667,000	—
1917 . . . . .	148,500,000	151,200,000	154,310,000	—
1918 . . . . .	150,000,000	149,400,000	—	—
1919 . . . . .	150,000,000	153,505,000	153,799,000	—
1920 . . . . .	154,600,000	151,313,000	156,163,000	154,201,462
1921 . . . . .	153,010,000	147,922,000	157,081,000	152,317,054
1922 . . . . .	157,020,000	157,061,000	158,795,000	154,555,267
1923 . . . . .	157,000,000	156,811,000	162,357,000	156,353,000

<sup>1</sup> For those years for which no statistics are given the authorities here quoted either did not compile estimates or their estimates are not available.

## Japanese Cotton Industry

Japan Cotton Spinners' Association

## Japanese Cotton Mills, Capital, Spindles and Looms

Years	Number of Companies	Number of Mills	Capital		Reserve Funds (Yen) <sup>1</sup>	Number of Spindles			Doubling Spindles	Looms
			Authorized (Yen) <sup>1</sup>	Paid-up (Yen) <sup>1</sup>		Ring	Mule	Total		
1903 . . . . .	51	—	38,555,400	34,029,216	5,123,892	1,295,086	86,220	1,381,306	126,976	5,043
1904 . . . . .	49	—	37,125,400	33,486,730	6,888,594	1,260,365	85,220	1,345,585	121,076	5,085
1905 . . . . .	49	—	40,082,350	33,563,700	9,531,622	1,343,534	83,060	1,426,594	134,840	8,140
1906 . . . . .	47	—	45,403,350	38,433,350	15,386,948	1,395,013	77,240	1,472,253	136,866	9,601
1907 . . . . .	42	118	90,036,300	57,531,125	20,966,234	1,492,032	48,420	1,540,452	154,789	9,462
1908 . . . . .	36	125	85,511,300	58,397,385	22,189,614	1,743,921	51,958	1,795,879	177,860	11,146
1909 . . . . .	31	134	75,871,300	64,501,000	22,784,470	1,903,854	51,038	1,954,892	227,574	13,813
1910 . . . . .	36	136	94,271,300	67,516,013	24,658,967	2,044,284	55,480	2,099,764	282,186	17,702
1911 . . . . .	34	139	89,160,150	64,347,164	24,788,872	2,117,756	53,040	2,170,796	286,410	20,431
1912 . . . . .	41	147	105,136,400	72,366,495	28,538,314	2,125,000	51,748	2,176,748	317,324	21,898
1913 . . . . .	44	152	113,036,401	86,444,059	33,803,119	2,365,094	49,405	2,414,499	320,912	24,224
1914 . . . . .	42	157	109,076,400	85,820,424	36,639,349	2,606,004	51,170	2,657,174	348,766	25,443
1915 . . . . .	41	161	110,176,400	86,011,677	38,663,064	2,754,124	53,390	2,807,514	355,318	30,068
1916 . . . . .	40	161	137,290,150	99,641,818	48,932,381	2,825,944	49,960	2,875,904	370,681	31,295
1917 . . . . .	43	170	162,830,150	115,623,020	70,037,275	3,008,568	51,910	3,060,478	383,458	36,181
1918 . . . . .	43	177	192,877,650	138,494,595	92,426,047	3,175,768	51,910	3,227,678	384,872	40,391
1919 . . . . .	54	190	221,927,650	165,758,695	139,073,869	3,435,932	52,330	3,488,262	410,690	44,401
1920 . . . . .	56	198	394,327,650	276,535,896	165,697,053	3,761,250	52,330	3,813,680	466,460	50,583
1921 . . . . .	61	217	429,577,650	295,648,358	182,040,774	4,116,616	44,510	4,161,126	538,384	54,994
1922 . . . . .	64	235	467,107,650	317,148,075	202,774,376	4,472,112	45,500	4,517,612	602,032	60,765

<sup>1</sup> Yen = \$0.4985 U. S.



## Japanese Yarn Production, Operatives and Wages

Japan Cotton Spinners' Association

Years	Average Working Spindles	Production of Cotton Yarn						Daily Operatives (Average)			Wages (Average Daily)	
		Coarse Yarn (Bales) <sup>1</sup>	Medium Yarn (Bales) <sup>1</sup>	Fine Yarn (Bales) <sup>1</sup>	Doubling (Bales) <sup>1</sup>	Gassed (Bales) <sup>1</sup>	Total (Bales) <sup>1</sup>	Males	Females	Total	Males (Rin) <sup>2</sup>	Females (Rin) <sup>2</sup>
1903	1,297,966	701,250.5	42,570.5	51.5	37,887.5	19,977.5	801,737.5	14,295	59,336	73,631	326	206
1904	1,249,086	610,931.5	33,786.0	106.5	32,266.5	18,122.5	695,213.0	11,451	50,220	61,671	336	204
1905	1,329,404	792,439.0	50,104.0	157.0	42,584.0	20,252.5	905,536.5	12,812	58,634	71,446	346	213
1906	1,404,714	826,363.0	55,125.0	148.0	43,376.5	20,155.0	945,167.5	14,496	61,278	75,774	365	228
1907	1,458,020	859,214.5	53,762.0	-	47,377.5	23,127.5	983,481.5	15,242	64,377	79,619	393	246
1908	1,367,631	738,659.0	54,171.0	-	59,555.5	26,185.0	878,570.5	15,049	56,154	74,203	410	250
1909	1,569,080	841,778.0	78,975.0	7.0	71,651.0	32,833.5	1,025,244.5	16,844	66,664	83,508	425	267
1910	1,741,168	964,675.0	63,637.5	1,814.5	74,436.5	30,217.0	1,134,780.5	18,266	75,614	93,880	434	272
1911	1,784,064	934,713.0	82,739.5	4,627.5	74,536.0	32,651.0	1,129,267.0	17,628	74,868	92,496	450	288
1912	1,984,191	1,090,172.5	119,893.5	6,722.5	95,683.5	39,737.5	1,352,209.5	18,421	80,779	99,200	467	305
1913	2,167,926	1,212,001.5	142,409.0	8,666.5	109,996.0	44,909.0	1,517,982.0	19,707	88,038	107,745	485	320
1914	2,369,801	1,350,850.5	149,498.0	7,760.5	119,790.0	38,282.0	1,666,181.0	22,163	92,251	114,414	491	319
1915	2,463,376	1,360,259.0	187,761.0	8,096.5	130,536.5	33,611.5	1,720,264.5	22,674	92,500	115,174	495	322
1916	2,757,299	1,458,617.0	259,840.0	10,153.5	155,483.5	41,485.0	1,925,579.0	23,845	97,279	121,124	500	334
1917	2,850,637	1,421,978.0	287,259.5	7,730.5	164,850.0	42,023.0	1,923,841.5	25,518	97,648	123,166	545	371
1918	2,936,495	1,245,723.5	366,868.5	7,427.5	138,286.5	45,560.0	1,803,866.0	26,790	95,069	121,859	686	476
1919	3,179,568	1,285,926.0	422,967.5	9,202.0	156,542.5	46,144.5	1,920,782.5	30,935	101,399	131,839	1,116	870
1920	3,191,753	1,222,525.5	401,808.5	7,477.5	146,562.5	38,542.0	1,816,976.0	33,966	109,782	143,748	1,567	1,196
1921	3,162,353	1,276,600.5	346,148.5	6,199.5	141,136.0	41,265.5	1,811,350.0	34,904	105,704	140,608	1,463	1,134

<sup>1</sup> Bales of 400 pounds each.<sup>2</sup> Rin = 1,000 yen.

## Japanese Cotton Piece-goods Production, Operatives and Wages

Japan Cotton Spinners' Association

YEARS	Average Working Looms	Production of Cotton Piece-goods (Yards)	Yarn Consumed (Pounds)	DAILY OPERATIVES (AVERAGE)			WAGES (AVERAGE DAILY)	
				Male	Female	Total	Male (Rin). <sup>1</sup>	Female (Rin). <sup>1</sup>
1903	.	4,963	76,702,213	20,771,345	657	4,253	368	235
1904	.	4,891	80,947,348	24,842,284	662	4,776	368	229
1905	.	6,420	114,908,132	36,545,146	989	6,847	384	255
1906	.	8,491	137,773,415	40,702,848	1,248	7,937	393	259
1907	.	9,245	135,253,029	44,262,958	1,525	8,727	430	277
1908	.	9,496	147,443,838	47,676,427	1,484	8,683	448	294
1909	.	11,585	181,976,972	57,388,586	1,871	11,496	450	304
1910	.	14,911	226,313,958	71,197,654	2,486	13,604	459	305
1911	.	17,884	289,039,671	82,493,136	2,656	17,133	471	325
1912	.	20,208	342,584,684	93,592,721	2,795	18,006	503	349
1913	.	23,299	416,725,357	111,159,616	3,298	21,956	530	363
1914	.	24,911	454,901,674	123,863,966	3,569	22,459	555	379
1915	.	27,687	502,076,621	124,632,631	3,547	22,930	526	374
1916	.	30,110	560,181,108	136,413,408	3,737	23,245	534	407
1917	.	31,920	594,649,419	142,770,758	4,333	24,434	583	445
1918	.	36,395	656,935,420	160,301,569	5,532	29,713	721	531
1919	.	40,969	739,390,012	179,788,560	7,635	37,040	1,133	889
1920	.	44,635	762,037,360	189,651,320	8,005	39,048	1,572	1,174
1921	.	44,109	700,697,985	179,427,501	7,078	32,182	1,492	1,146

<sup>1</sup> Rin = 1/1000 yen.

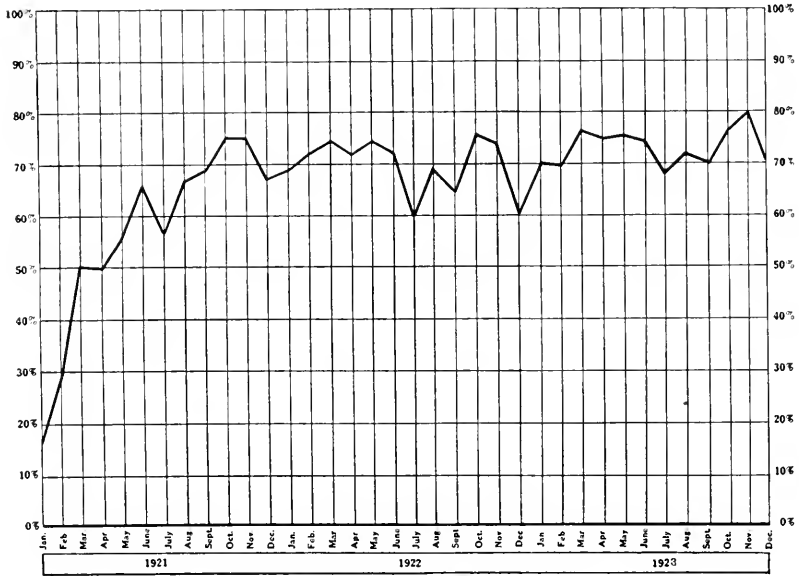
# Indian Yarn Production

[In pounds]

Department of Statistics, India

Fiscal Years ending March 31	Counts 1-12	Counts over 12	Counts over 15	Counts 20 and over	Counts over 22	Counts over 32	Total all Counts
1910-11	207,500,950	402,022,486	357,401,069	286,800,386	93,044,789	14,164,373	609,532,436
1911-12	190,615,627	433,677,328	386,253,430	312,258,578	103,612,417	16,535,131	624,322,655
1912-13	239,721,030	448,039,765	396,350,672	319,491,171	111,653,111	16,901,358	687,760,795
1913-14	233,643,300	448,490,863	399,266,359	320,992,218	109,631,349	14,019,139	682,134,253
1914-15	220,194,466	431,314,975	377,146,978	300,656,706	102,540,454	12,769,510	651,509,411
1915-16	260,337,271	461,435,823	404,471,369	319,591,815	106,240,756	42,305,581	721,773,097
1916-17	219,750,231	461,010,063	403,761,898	318,157,008	118,128,025	17,808,941	680,760,294
1917-18	193,374,553	466,977,783	403,005,598	321,052,191	131,274,554	19,096,551	660,352,336
1918-19	161,285,869	453,523,437	391,177,022	314,908,993	130,658,399	14,034,609	614,809,306
1919-20	174,732,119	460,752,829	405,203,195	323,181,427	117,211,723	12,972,539	635,481,918
1920-21	175,376,300	484,271,405	420,918,022	336,252,620	123,042,860	8,890,653	659,647,705
1921-22	197,376,737	495,593,803	427,303,790	344,573,122	133,937,430	9,493,469	692,970,540
1922-23	191,167,444	514,467,985	444,036,923	360,416,448	132,757,809	9,090,148	705,634,529

Per Cent of Normal Production of Knitted Underwear Industry



The above chart is based on the table on the following page.

## Production of Knitted Underwear during 1922 and 1923

The statistics below were compiled by the Associated Knit Underwear Manufacturers of America. They are based on reports made to that association by approximately 60 mills, whose output equals about 40 per cent of the production of the entire industry.

Month	WINTER UNDERWEAR			SUMMER UNDERWEAR			TOTAL UNDERWEAR		
	Number of Mills reporting	Actual Production (Dozens)	Production in Per Cent of Normal	Number of Mills reporting	Actual Production (Dozens)	Production in Per Cent of Normal	Number of Mills reporting	Actual Production (Dozens)	Production in Per Cent of Normal
<b>1922</b>									
January	36	292,512	65.8	37	347,977	95.3	55	642,490	939,313
February	36	332,224	74.0	32	331,122	97.4	53	663,346	21,341
March	36	392,597	84.0	31	363,652	105.0	54	756,249	1,017,792
April	38	275,761	75.4	31	246,124	92.6	53	522,035	725,019
May	34	298,080	70.5	28	220,070	79.7	47	518,150	698,845
June	38	345,695	72.4	25	219,288	71.9	47	564,893	782,401
July	41	269,223	59.1	23	152,619	61.8	50	422,872	701,655
August	41	341,713	72.7	24	177,708	62.5	49	519,511	751,562
September	42	318,229	66.9	27	195,352	60.8	52	513,572	797,368
October	28	199,551	71.1	18	193,396	82.1	38	392,947	583,871
November	38	321,944	74.1	28	277,947	77.7	49	599,891	810,350
December	36	233,159	60.3	27	228,236	61.8	52	461,695	756,877
<b>1923</b>									
January	37	269,026	67.8	28	289,819	73.5	49	558,815	791,301
February	38	269,950	67.3	32	294,758	71.8	50	564,708	811,774
March	35	275,552	72.0	32	317,468	80.9	49	593,020	775,018
April	34	372,686	76.8	33	359,751	76.9	52	732,437	977,928
May	38	373,068	73.1	30	324,450	74.3	52	697,518	922,658
June	30	287,987	77.6	23	222,753	69.8	45	510,780	690,363
July	34	276,366	74.9	18	157,079	58.6	42	433,445	637,091
August	36	330,517	90.0	20	123,703	47.3	40	454,220	629,174
September	34	277,519	81.4	24	180,498	55.7	45	458,017	652,947
October	36	316,046	78.8	23	235,079	73.1	45	551,125	722,799
November	35	310,082	80.0	24	237,472	78.4	46	547,554	690,842
December	31	260,465	64.0	23	239,149	76.7	43	439,614	625,062

# Legal Working Hours for Women

Women's Bureau, United States Department of Labor

	Daily	Weekly
Alabama . . . . .	No limitation	No limitation
Arizona . . . . .	8	56
Arkansas . . . . .	9	54
California . . . . .	8	48
Colorado . . . . .	8	56
Connecticut . . . . .	10	55
Delaware . . . . .	10	55
District of Columbia . . . . .	8	48
Florida . . . . .	No limitation	No limitation
Georgia . . . . .	10	60
Idaho . . . . .	9	63
Illinois . . . . .	10	70
Indiana . . . . .	No limitation	No limitation
Iowa . . . . .	No limitation	No limitation
Kansas . . . . .	9	49½
Kentucky . . . . .	10	60
Louisiana . . . . .	10	60
Maine . . . . .	9	54
Maryland . . . . .	10	60
Massachusetts . . . . .	9	48
Michigan . . . . .	9	54
Minnesota . . . . .	9½	54
Mississippi . . . . .	10	60
Missouri . . . . .	9	54
Montana . . . . .	8	56
Nebraska . . . . .	9	54
Nevada . . . . .	8	56
New Hampshire . . . . .	10½	54
New Jersey . . . . .	10	54
New Mexico . . . . .	8	56
New York . . . . .	9	54
North Carolina . . . . .	11	60
North Dakota . . . . .	8½	48
Ohio . . . . .	9	50
Oklahoma . . . . .	9	54
Oregon . . . . .	9	48
Pennsylvania . . . . .	10	54
Rhode Island . . . . .	10½	54 <sup>1</sup>
South Carolina . . . . .	10	55
South Dakota . . . . .	10	54
Tennessee . . . . .	10½	57
Texas . . . . .	9	54
Utah . . . . .	8	48
Vermont . . . . .	10½	56
Virginia . . . . .	10	60
Washington . . . . .	8	56
West Virginia . . . . .	No limitation	No limitation
Wisconsin . . . . .	9	50
Wyoming . . . . .	10	60

NOTE. — Above table, carried through the legislative session of 1923-24, is based on legislation which covers the greatest number of women workers.

<sup>1</sup> The Lavander Bill which takes effect June 1, 1924, provided the Rhode Island Supreme Court decides it to have passed legally, provides for a 9 hour day and a 48 hour week.

# Approximate Value of Foreign Money

Prepared by The Merchants National Bank of Boston

COUNTRY	Monetary Unit and Fractions	Approximate Par Value of Foreign Unit in United States Dollars	Approximate Value of United States Dollar in Foreign Unit at Par
Argentina <sup>1</sup>	{ 1 Gold peso = 100 Centavos	\$0.9648	1.0362 Gold pesos
	{ 1 Paper peso = 100 Centavos	.4245	2.3557 Paper pesos
Austria	1 Krone = 100 Hellers	.2026	4.9351 Kronen
Belgium	1 Franc = 100 Centimes	.1930	5.1813 Francs
Bolivia	1 Boliviano = 100 Centavos	.3893	2.5686 Bolivianos
Brazil <sup>2</sup>	{ 1 Gold milreis = 1,000 Reis	.5462	1.8308 Gold milreis
	{ 1 Paper milreis = 1,000 Reis	.3244	3.0823 Paper milreis
Bulgaria	1 Lev = 100 Stotinki	.1930	5.1813 Leva
Chile <sup>3</sup>	1 Peso = 100 Centavos	.3650	2.7397 Pesos
China <sup>4</sup>	-	-	-
Colombia	1 Peso = 100 Centavos	.9733	1.0274 Pesos
Czecho-Slovakia	1 Krone = 100 Hellers	.2026	4.9351 Kronen
Denmark	1 Krone = 100 Ore	.2680	3.7313 Kroner
Ecuador	1 Sucre = 100 Centavos	.4867	2.0548 Sucres
Egypt	1 Egyptian pound = 100 Piastres	4.9431	.2023 Egyptian pounds
Finland	1 Markka = 100 Pennia	.1930	5.1813 Markka
France	1 Franc = 100 Centimes	.1930	5.1813 Francs
Germany	1 Mark = 100 Pfennige	.2382	4.1979 Marks
Greece	1 Drachma = 100 Lepta	.1930	5.1813 Drachmas
Great Britain	{ 1 Pound sterling = 20 Shillings	4.8666	0-4-11 Pounds sterling
	{ 1 Shilling = 12 Pence	.2433	4.1101 Shillings
Holland	1 Guilder or florin = 100 Cents	.4020	2.4878 Guilders
Honduras	1 Peso = 100 Centavos	.4340	2.3041 Pesos
Hungary	1 Krone = 100 Fillers	.2026	4.9351 Kronen
India	{ 1 Rupee = 16 Annas	.4867	2.0530 Rupees
	{ 1 Anna = 12 Pies		
Italy	1 Lira = 100 Centesimi	.1930	5.1813 Lire
Japan	1 Yen = 100 Sen	.4985	2.0062 Yen
Jugo-Slavia	{ 1 Dinar = 100 Paras	.1930	5.1813 Dinars
	{ 4 Kronen = 1 Dinar		
	{ 1 Krone = 100 Hellers		
Mexico	1 Peso = 100 Centavos	.4985	2.0062 Pesos
Norway	1 Krone = 100 Ore	.2680	3.7313 Kroner
Paraguay <sup>5</sup>	1 Peso = 100 Centavos	.9980	1.002 Pesos
Persia	1 Kran = 20 Shahis	.0733	13.6425 Krans
Peru	{ 1 Peruvian pound = 10 Soles	4.8666	.2053 Peruvian pounds
	{ 1 Sol = 100 Centavos	.4867	2.0533 Soles
Philippines	1 Peso = 100 Centavos	.5000	2.000 Pesos
Poland	1 Polish mark = 100 Fenigow	.2382	4.1979 Polish marks
Portugal	1 Escudo = 100 Centavos	1.0805	.9254 Escudos
Rumania	1 Leu = 100 Bani	.1930	5.1813 Lei
Russia	1 Rouble = 100 Kopeks	.5146	1.9434 Roubles
Serbia	1 Dinar = 100 Paras	.1930	5.1813 Dinars
Spain	1 Peseta = 100 Centimos	.1930	5.1813 Pesetas
Sweden	1 Krona = 100 Ore	.2680	3.7313 Kronor
Switzerland	1 Franc = 100 Centimes	.1930	5.1813 Francs
Turkey	1 Piastre = 40 Paras	.0439	22.7272 Piastres
Uruguay	1 Peso = 100 Centesimos	1.0342	.9671 Pesos
Venezuela	1 Bolivar = 100 Centimos	.1930	5.1813 Bolivares

<sup>1</sup> Paper is convertible into gold and *vice versa* at the fixed rate of 44 gold pesos to 100 paper pesos.  
<sup>2</sup> Gold currency is theoretical; the actual currency is the paper milreis, which by law is supposed to equal 16 English pence, but which, being inconvertible, fluctuates in value.

<sup>3</sup> Actual circulation is the paper peso, which by law is supposed to equal 18 English pence, but which, being inconvertible, fluctuates in value.

<sup>4</sup> There is no uniform currency in China, the Mexican silver dollar being mostly used. The British dollar, termed Hongkong currency, has the same legal value as the Mexican dollar in Hongkong and the Straits settlements, and usually prevails at about 50 cents United States gold.

<sup>5</sup> Nominally the monetary system is based on gold pesos of the above value. Actual circulation, however, is practically confined to paper notes, which, being irredeemable, have depreciated to the approximate value of 4 cents United States currency.

NOTE. — Foreign money values are all subject to fluctuations.







# TECHNICAL

## FOREWORD

The Technical Section of the Year Book of The National Association of Cotton Manufacturers is a collection of selected charts and tables, covering in a concise manner many questions of a technical nature which are apt to occur in cotton manufacturing. A reference work of this kind does not contemplate replacing books which cover the material in more detail; in fact, its value lies in presenting the essentials without the details. In view of the vast multiplicity of detail involved in cotton manufacturing, it is necessary that executives have ready access to the essential facts in some form of a condensed reference book, where these facts are collected from many authentic sources and can be presented without the logical order and sequence which the textbook must follow, and with obsolete material omitted. Thus the scope of the book has been intentionally limited to include only special engineering data that would find frequent application in a textile mill. It is believed that members of the Association will find the Year Book valuable as a ready reference, as it represents the result of a great deal of careful study and sorting out on the part of the Technical Department.

F. S. BLANCHARD, *Chairman,*  
*Technical Committee.*

## INTRODUCTION

The Technical Section of the Year Book, containing, as it does, many standard reference tables for the cotton manufacturer, is not subject to extensive changes from year to year. Continuing the policy adopted in the 1923 Year Book, the reference data have been grouped by subjects as far as possible, and include Weight Equivalents, Conversion Tables, Units of Capacity, Power Transmission and Losses, Roving Yarn and Cloth Tables and Humidity Charts and Tables.

New material added this year includes Common Technical Abbreviations approved by the American Society for Testing Materials; a Conversion Table for converting specific gravity into degrees Twaddle, and Beaumé; a Table of the Physical Properties from the Federal Specifications Board Specifications for Manila Rope; the Common and Range of Production for Cotton Machinery; the Analysis of Cloth for Tariff Purposes; and the Contract Sales Note for staple gray goods.

In addition to the specific acknowledgments made on the following pages, we are particularly indebted to Professor Stephen E. Smith; The Cotton Research Company; Saco-Lowell Shops; Professor George B. Haven; Whitin Machine Works; Draper Corporation; and the H. & B. American Machine Company for special data.

# Common Abbreviations

## Approved by American Society for Testing Materials

### (a) Units of Length

Centimeter . . . . .	cm.
Decimeter . . . . .	dm.
Foot . . . . .	ft.
Inch . . . . .	in.
Kilometer . . . . .	km.
Linear . . . . .	lin.
Meter . . . . .	spell out
Mile . . . . .	spell out
Millimeter . . . . .	mm.
Yard . . . . .	yd.

### (b) Units of Area

Circular mil . . . . .	cir. mil.
Square . . . . .	sq.
Square foot . . . . .	sq. ft.
Square inch . . . . .	sq. in.

### (c) Units of Volume

Barrel . . . . .	bbl.
Bushel . . . . .	bu.
Centiliter . . . . .	cl.
Cubic . . . . .	cu.
Cubic centimeter . . . . .	cc.
Decaliter . . . . .	dal.
Deciliter . . . . .	dl.
Gallon . . . . .	gal.
Hectoliter . . . . .	hl.
Liter . . . . .	spell out
Milliliter . . . . .	ml.
Pint . . . . .	pt.
Quart . . . . .	qt.

### (d) Units of Weight

Centigram . . . . .	cg.
Decigram . . . . .	dg.
Grain . . . . .	gr.
Gram . . . . .	g.
Kilogram . . . . .	kg.
Milligram . . . . .	mg.
Ounce . . . . .	oz.
Pound . . . . .	lb.
Ton . . . . .	spell out

### (e) Units of Time

Afternoon . . . . .	P.M.
Day . . . . .	spell out
Forenoon . . . . .	A.M.
Hour . . . . .	hr.

Minute . . . . .	min.
Month . . . . .	spell out
Second . . . . .	sec.
Week . . . . .	spell out
Year . . . . .	spell out

### (f) Electrical and Magnetic Terms

Ampere . . . . .	spell out
Electric horse power . . . . .	e. h. p.
Electromotive force . . . . .	e. m. f.
Magnetomotive force . . . . .	m. m. f.
Ohm . . . . .	spell out
Volt . . . . .	spell out

### (g) Units of Power

Brake horse power . . . . .	b. h. p.
Horse power . . . . .	h. p.
Indicated horse power . . . . .	i. h. p.
Kilowatt . . . . .	kw.
Watt . . . . .	spell out

### (h) Units of Heat

British Thermal Unit . . . . .	B. t. u.
Calorie . . . . .	cal.
Centigrade . . . . .	C.
Fahrenheit . . . . .	F.
Degree . . . . .	°

### (i) Miscellaneous Technical Terms

Birmingham wire gage . . . . .	B. w. g.
Brown & Sharpe (gage) . . . . .	B. & S.
Chemically pure . . . . .	c. p.
Degree (angular measure) . . . . .	deg.
Diameter . . . . .	spell out
Parts per million . . . . .	p. p. m.
Revolutions per minute . . . . .	r. p. m.
Specific gravity . . . . .	sp. gr.
Tensile strength . . . . .	tens. str.
United States (gage) . . . . .	U. S.

### (j) Miscellaneous General Terms

Figure . . . . .	Fig.
Number . . . . .	No.
Per . . . . .	spell out
Per centum . . . . .	per cent
Proceedings . . . . .	spell out
Plate . . . . .	spell out
Table . . . . .	spell out
Transactions . . . . .	spell out
Volume . . . . .	Vol.

**Valuable Reference Data**

1 Pint of water weighs 1.045 lbs.

1 Gallon of water = .1339 cubic feet = 8.36 lbs. of water at 62° F.

1 Knot = 6,080 feet = 1.15 statute miles.

1 Mile = 5,280 feet.

1 Pound (avoirdupois) = 7,000 grains = 453.6 grammes.

1 Pound (Troy) = 5,760 grains.

1 horse power = 33,000 foot lbs. of work done per min. = 746 watts.

1 French horse power or force de cheval = 4,500 kilogrammetres per min. = .9863 English horse power.

1 English horse power = 1.01385 French force de cheval.

The pressure of one atmosphere = 14.7 lbs. per square inch, = 2,116 lbs. per square foot = a column of mercury 760 mm high.

A column of water 2.3 feet high corresponds to a pressure of .1 lb. per square inch.

Cubic inches of cast iron  $\times 0.26$  = lbs. avoirdupois.

Cubic inches of wrought iron  $\times 0.28$  = lbs. avoirdupois.

Thickness of wrought iron plate in inches  $\times 40$  = lbs. per square foot.

Sectional area of wrought iron in inches  $\times 3.34$  = lbs. per lineal foot.

Diameter of wrought iron in inches squared  $\times 2.64$  = lbs. per lineal foot.

A freely falling body traverses a distance of 16.08 feet the first second.

The distance traversed in any number of seconds is equal to  $16.08 \times$  number of seconds squared.

A horse power represents the ability to raise 33,000 pounds 1 foot high in one minute.

Water weighs about  $62\frac{1}{2}$  pounds to cubic foot.

One acre equals 43,560 square feet.

**Weight Equivalents**

Corrected to second decimal place

1 ounce = 437.5 grains = 28.35 grams	9 ounces = 3937.5 grains = 255.14 grams
$1\frac{1}{2}$ ounces = 656.25 grains = 42.52 grams	$9\frac{1}{2}$ ounces = 4156.25 grains = 269.32 grams
2 ounces = 875.0 grains = 56.70 grams	10 ounces = 4375.0 grains = 283.50 grams
$2\frac{1}{2}$ ounces = 1093.75 grains = 70.87 grams	$10\frac{1}{2}$ ounces = 4593.75 grains = 297.67 grams
3 ounces = 1312.5 grains = 85.05 grams	11 ounces = 4812.5 grains = 311.84 grams
$3\frac{1}{2}$ ounces = 1531.25 grains = 99.22 grams	$11\frac{1}{2}$ ounces = 5031.25 grains = 326.02 grams
4 ounces = 1750.0 grains = 113.40 grams	12 ounces = 5250.0 grains = 340.19 grams
$4\frac{1}{2}$ ounces = 1968.75 grains = 127.57 grams	$12\frac{1}{2}$ ounces = 5468.75 grains = 354.37 grams
5 ounces = 2187.5 grains = 141.75 grams	13 ounces = 5687.5 grains = 368.54 grams
$5\frac{1}{2}$ ounces = 2406.25 grains = 155.92 grams	$13\frac{1}{2}$ ounces = 5906.25 grains = 382.71 grams
6 ounces = 2625.0 grains = 170.10 grams	14 ounces = 6125.0 grains = 396.89 grams
$6\frac{1}{2}$ ounces = 2843.75 grains = 184.27 grams	$14\frac{1}{2}$ ounces = 6343.75 grains = 411.06 grams
7 ounces = 3062.5 grains = 198.44 grams	15 ounces = 6562.5 grains = 425.24 grams
$7\frac{1}{2}$ ounces = 3281.25 grains = 212.62 grams	$15\frac{1}{2}$ ounces = 6781.25 grains = 439.41 grams
8 ounces = 3500.0 grains = 226.79 grams	16 ounces = 7000.0 grains = 453.59 grams
$8\frac{1}{2}$ ounces = 3718.75 grains = 240.97 grams	

### Metric Conversion Table

Millimetres $\times .03937$ = inches.	Hectolitres $\times 2.84$ = Bu. (2150.42 cu. in.)
Millimetres $\div 25.4$ = inches.	Hectolitres $\times .131$ = cu. yds.
Centimetres $\times .3937$ = inches.	Hectolitres $\div 26.42$ = gals. (231 cu. in.)
Centimetres $\div 2.54$ = inches.	Grammes $\times 15.432$ = grains.
Metres $\times 39.37$ = inches.	Grammes $\div 981$ = dynes.
Metres $\times 3.281$ = feet.	Grammes (water) $\div 29.57$ = fluid oz.
Metres $\times 1.094$ = yards.	Grammes $\div 28.35$ = oz. avoirdupois.
Kilometres $\times .621$ = miles.	Grammes per cu. cent. $\div 27.7$ = lbs. p. cu. in.
Kilometres $\div 1.6093$ = miles.	Joule $\times .7373$ = ft. lbs.
Kilometres $\times 3280.8693$ = feet.	Kilo-grammes $\times 2.2046$ = pounds.
Sq. Millimetres $\times .00155$ = sq. in.	Kilo-grammes $\times 35.3$ = oz. avoirdupois.
Sq. Millimetres $\div 645.1$ = sq. in.	Kilo-grammes $\div 907.2$ = tons (2,000 lbs.)
Sq. Centimetres $\times .155$ = sq. in.	Kilo-gr. p. sq. cent. $\times 14.223$ = lbs. p. sq. in.
Sq. Centimetres $\div 6.451$ = sq. in.	Kilo-gram.-metres $\times 7.233$ = ft. lbs.
Sq. Metres $\times 10.764$ = sq. ft.	Kilo-gr. p. Metre $\times .672$ = lbs. per ft.
Sq. Kilometres $\times 247.1$ = acres.	Kilo-gr. p. cu. Metre $\times .062$ = lbs. p. cu. ft.
Hectare $\times 2.471$ = acres.	Kilo-gr. p. Cheval $\times 2.235$ = lbs. p. H. P.
Cu. Centimetres $\div 16.383$ = cu. in.	Kilo-Watts $\times 1.34$ = horse power.
Cu. Centimetres $\div 3.69$ = fl. drams.	Watts $\div 746$ = horse power.
Cu. Centimetres $\div 29.57$ = fluid oz.	Watts $\times .7373$ = ft. pounds p. second.
Cu. Metres $\times 35.315$ = cu. ft.	Calorie $\times 3.968$ = B. T. U.
Cu. Metres $\times 1.308$ = cu. yards.	Cheval vapeur $\times .9863$ = horse power.
Cu. Metres $\times 264.2$ = gals. (231 cu. in.)	(Centigrade $\times 1.8$ ) $+ 32$ = degree Fahr.
Litres $\times 61.022$ = cu. in.	Franc $\times .193$ = dollars.
Litres $\times 33.84$ = fluid oz.	Gravity Paris = 980.94 centimetres per sec.
Litres $\times .2642$ = gals. (231 cu. in.)	
Litres $\div 3.78$ = gals. (231 cu. in.)	
Litres $\div 28.316$ = cu. ft.	
Hectolitres $\times 3.531$ = cu. ft.	

### Mensuration of Surfaces, Solids, etc.

Area of triangle = base $\times$ half the perpendicular height.
Area of circle = dia. <sup>2</sup> $\times 0.7854$ .
Circum. of circle = dia. $\times 3.14159$ .
Circum. of circle $\times .31831$ = the dia.
Dia. of circle $\times .8862$ = the side of an equal square.
Side of a square $\times 1.12837$ = the dia. of equal circle.
Square root of an area $\times 1.12837$ = the dia. of equal circle.
Surface of cylinder = area of both ends $+ \text{length} \times \text{circum.}$
Surface of cone = area of base $+ \frac{1}{2}$ (slant height $\times$ circum. of base).
Surface of sphere = dia. squared $\times 3.14159$ .
Solidity of sphere = dia. cubed $\times .5236$ .
Solidity of cylinder = area of one end $\times \text{length.}$

**Comparative Table of the United States and Metric Systems**

Denomination	Equivalent
One grain equals in grammes . . . . .	0.0648
One pound avoirdupois equals in kilogrammes . . . . .	0.4536
One ton of 2,240 pounds equals in tonnes . . . . .	1.0160
One ton of 2,000 pounds equals in tonnes . . . . .	0.9071
One inch equals in millimetres . . . . .	25.400
One foot equals in metres . . . . .	0.3048
One mile equals in kilometres . . . . .	1.6094
One square inch equals in square millimetres . . . . .	645.2
One square foot equals in square metres . . . . .	0.09291
One acre equals in acres (100 square metres) . . . . .	40.47
One square mile equals in square kilometres . . . . .	2.590
One cubic inch equals in cubic centimetres . . . . .	16.39
One cubic foot equals in cubic metres . . . . .	0.02832
One cubic yard equals in cubic metres . . . . .	0.7646
One quart dry measure equals in litres . . . . .	1.101
One quart liquid or wine measure equals in litres . . . . .	0.9465
One foot pound equals in kilogrammetres . . . . .	0.1383
One pound per foot equals in kilogrammes per metre . . . . .	1.488
One thousand pounds per square inch equals in kilogrammes per square millimetres . . . . .	0.703
One pound per square foot equals in kilogrammes per square metre . . . . .	4.882
One pound per cubic foot equals in kilogrammes per cubic metre . . . . .	16.02
One degree Fahrenheit equals in degrees Centigrade . . . . .	0.5556

**Comparative Table of the Metric and United States Systems**

One gramme equals in grains . . . . .	15.433
One kilogramme equals in pounds avoirdupois . . . . .	2.2047
One tonne equals in tons of 2,240 pounds . . . . .	0.9843
One tonne equals in tons of 2,000 pounds . . . . .	1.1024
One millimetre equals in inches . . . . .	0.0394
One metre equals in feet . . . . .	3.2807
One kilometre equals in miles . . . . .	0.6213
One square millimetre equals in square inches . . . . .	0.00155
One square metre equals in square feet . . . . .	10.763
One are (100 square metres) equals in acres . . . . .	0.02471
One square kilometre equals in square miles . . . . .	0.3861
One cubic centimetre equals in cubic inches . . . . .	0.0610
One cubic metre or stere equals in cubic feet . . . . .	35.3105
One cubic metre equals in cubic yards . . . . .	1.3078
One litre (one cubic decimetre) equals in cubic inches . . . . .	61.017
One litre equals in quarts, dry measure . . . . .	0.908
One litre equals in quarts, liquid or wine measure . . . . .	1.0566
One kilogrammetre equals in foot pounds . . . . .	7.2331
One kilogramme per metre equals in pounds per foot . . . . .	0.6720
One kilogramme per sq. millimetre equals in pounds per sq. inch . . . . .	1,422.
One kilogramme per sq. metre equals in pounds per sq. foot . . . . .	0.2048
One kilogramme per cubic metre equals in pounds per cubic foot . . . . .	0.0624
One degree Centigrade equals in degrees Fahrenheit . . . . .	1.8

### Comparison of English and French Counts of Cotton Yarn

English Counts	French Counts	English Counts	French Counts	English Counts	French Counts	English Counts	French Counts	English Counts	French Counts
1	0.847	17	14.40	46	38.96	78	66.07	150	127.05
2	1.693	18	15.25	48	40.66	80	67.76	160	135.52
3	2.540	19	16.09	50	42.35	82	69.45	170	143.99
4	3.388	20	16.94	52	44.04	84	71.15	180	152.46
5	4.235	22	18.63	54	45.74	86	72.84	190	160.93
6	5.082	24	20.33	56	47.43	88	74.54	200	169.40
7	5.929	26	22.02	58	49.13	90	76.23	210	177.87
8	6.776	28	23.72	60	50.82	92	77.92	220	186.34
9	7.623	30	25.41	62	52.51	94	79.62	230	194.81
10	8.470	32	27.10	64	54.21	96	81.31	240	203.28
11	9.313	34	28.80	66	55.90	98	83.01	250	211.75
12	10.16	36	30.49	68	57.00	100	84.70	260	220.22
13	11.01	38	32.19	70	59.29	110	93.17	270	228.69
14	11.86	40	33.88	72	60.98	120	101.64	280	237.16
15	12.70	42	35.57	74	62.68	130	110.11	290	245.63
16	13.55	44	37.27	76	64.37	140	118.58	300	254.10

### Comparison of French and English Counts of Cotton Yarn

French Counts	English Counts	French Counts	English Counts	French Counts	English Counts	French Counts	English Counts	French Counts	English Counts
1	1.18	17	20.1	46	54.3	78	92.—	150	177.—
2	2.36	18	21.2	48	56.6	80	94.4	160	189.—
3	3.54	19	22.4	50	59.—	82	96.8	170	201.—
4	4.72	20	23.6	52	61.4	84	99.2	180	212.—
5	5.90	22	26.—	54	63.7	86	101.5	190	224.—
6	7.08	24	28.3	56	66.1	88	103.8	200	236.—
7	8.26	26	30.7	58	68.4	90	106.2	210	247.8
8	9.44	28	33.—	60	70.8	92	108.6	220	260.—
9	10.6	30	35.4	62	73.1	94	110.9	230	271.4
10	11.8	32	37.8	64	75.5	96	113.2	240	283.—
11	13.—	34	40.1	66	77.9	98	115.6	250	295.—
12	14.2	36	42.5	68	80.2	100	118.—	260	307.—
13	15.3	38	44.8	70	82.6	110	130.—	270	318.6
14	16.5	40	47.2	72	84.9	120	141.6	280	330.—
15	17.7	42	49.6	74	87.3	130	153.—	290	342.2
16	18.9	44	51.9	76	89.7	140	165.—	300	354.—

## Specific Gravity, Degrees Twaddle and Degrees Beaumé

English Standard 15°c.

Twaddle.	Beaumé	Specific Gravity	Twaddle	Beaumé	Specific Gravity	Twaddle	Beaumé	Specific Gravity	Twaddle	Beaumé	Specific Gravity
0	0	1.000	44	26.0	1.220	88	44.1	1.440	132	57.4	1.660
1	0.7	1.005	45	26.4	1.225	89	44.4	1.445	133	57.7	1.665
2	1.4	1.010	46	26.9	1.230	90	44.8	1.450	134	57.9	1.670
3	2.1	1.015	47	27.4	1.235	91	45.1	1.455	135	58.2	1.675
4	2.7	1.020	48	27.9	1.240	92	45.4	1.460	136	58.4	1.680
5	3.4	1.025	49	28.4	1.245	93	45.8	1.465	137	58.7	1.685
6	4.1	1.030	50	28.8	1.250	94	46.1	1.470	138	58.9	1.690
7	4.7	1.035	51	29.3	1.255	95	46.4	1.475	139	59.2	1.695
8	5.4	1.040	52	29.7	1.260	96	46.8	1.480	140	59.5	1.700
9	6.0	1.045	53	30.2	1.265	97	47.1	1.485	141	59.7	1.705
10	6.7	1.050	54	30.6	1.270	98	47.4	1.490	142	60.0	1.710
11	7.4	1.055	55	31.1	1.275	99	47.8	1.495	143	60.2	1.715
12	8.0	1.060	56	31.5	1.280	100	48.1	1.500	144	60.4	1.720
13	8.7	1.065	57	32.0	1.285	101	48.4	1.505	145	60.6	1.725
14	9.4	1.070	58	32.4	1.290	102	48.7	1.510	146	60.9	1.730
15	10.0	1.075	59	32.8	1.295	103	49.0	1.515	147	61.1	1.735
16	10.6	1.080	60	33.3	1.300	104	49.4	1.520	148	61.4	1.740
17	11.2	1.085	61	33.7	1.305	105	49.7	1.525	149	61.6	1.745
18	11.9	1.090	62	34.2	1.310	106	50.0	1.530	150	61.8	1.750
19	12.4	1.095	63	34.6	1.315	107	50.3	1.535	151	62.1	1.755
20	13.0	1.100	64	35.0	1.320	108	50.6	1.540	152	62.3	1.760
21	13.6	1.105	65	35.4	1.325	109	50.9	1.545	153	62.5	1.765
22	14.2	1.110	66	35.8	1.330	110	51.2	1.550	154	62.8	1.770
23	14.9	1.115	67	36.2	1.335	111	51.5	1.555	155	63.0	1.775
24	15.4	1.120	68	36.6	1.340	112	51.8	1.560	156	63.2	1.780
25	16.0	1.125	69	37.0	1.345	113	52.1	1.565	157	63.5	1.785
26	16.5	1.130	70	37.4	1.350	114	52.4	1.570	158	63.7	1.790
27	17.1	1.135	71	37.8	1.355	115	52.7	1.575	159	64.0	1.795
28	17.7	1.140	72	38.2	1.360	116	53.0	1.580	160	64.2	1.800
29	18.3	1.145	73	38.6	1.365	117	53.3	1.585	161	64.4	1.805
30	18.8	1.150	74	39.0	1.370	118	53.6	1.590	162	64.6	1.810
31	19.3	1.155	75	39.4	1.375	119	53.9	1.595	163	64.8	1.815
32	19.8	1.160	76	39.8	1.380	120	54.1	1.600	164	65.0	1.820
33	20.3	1.165	77	40.1	1.385	121	54.4	1.605	165	65.2	1.825
34	20.9	1.170	78	40.5	1.390	122	54.7	1.610	166	65.5	1.830
35	21.4	1.175	79	40.8	1.395	123	55.0	1.615	167	65.7	1.835
36	22.0	1.180	80	41.2	1.400	124	55.2	1.620	168	65.9	1.840
37	22.5	1.185	81	41.6	1.405	125	55.5	1.625	169	66.1	1.845
38	23.0	1.190	82	42.0	1.410	126	55.8	1.630	170	66.3	1.850
39	23.5	1.195	83	42.3	1.415	127	56.0	1.635	171	66.5	1.855
40	24.0	1.200	84	42.7	1.420	128	56.3	1.640	172	66.7	1.860
41	24.5	1.205	85	43.1	1.425	129	56.6	1.645	173	67.0	1.865
42	25.0	1.210	86	43.4	1.430	130	56.9	1.650			
43	25.5	1.215	87	43.8	1.435	131	57.1	1.655			



## Decimal Equivalents of Common Fractions

1	$\frac{1}{2}$ s	$\frac{1}{4}$ s	8ths	16s	32ds	64s	Decimal Equivalent
1	1	2	4	8	16	32	1.000
2	1	2	4	8	16	32	.500
3	1	2	4	8	16	32	.333
4	1	2	4	8	16	32	.250
5	1	2	4	8	16	32	.200
6	1	2	4	8	16	32	.167
7	1	2	4	8	16	32	.143
8	1	2	4	8	16	32	.125
9	1	2	4	8	16	32	.111
10	1	2	4	8	16	32	.100
11	1	2	4	8	16	32	.091
12	1	2	4	8	16	32	.083
13	1	2	4	8	16	32	.077
14	1	2	4	8	16	32	.071
15	1	2	4	8	16	32	.067
16	1	2	4	8	16	32	.063
17	1	2	4	8	16	32	.059
18	1	2	4	8	16	32	.056
19	1	2	4	8	16	32	.053
20	1	2	4	8	16	32	.050
21	1	2	4	8	16	32	.048
22	1	2	4	8	16	32	.045
23	1	2	4	8	16	32	.043
24	1	2	4	8	16	32	.042
25	1	2	4	8	16	32	.040
26	1	2	4	8	16	32	.038
27	1	2	4	8	16	32	.037
28	1	2	4	8	16	32	.036
29	1	2	4	8	16	32	.035
30	1	2	4	8	16	32	.033
31	1	2	4	8	16	32	.032
32	1	2	4	8	16	32	.031
33	1	2	4	8	16	32	.030
34	1	2	4	8	16	32	.029
35	1	2	4	8	16	32	.028
36	1	2	4	8	16	32	.027
37	1	2	4	8	16	32	.026
38	1	2	4	8	16	32	.025
39	1	2	4	8	16	32	.024
40	1	2	4	8	16	32	.023
41	1	2	4	8	16	32	.022
42	1	2	4	8	16	32	.021
43	1	2	4	8	16	32	.020
44	1	2	4	8	16	32	.019
45	1	2	4	8	16	32	.018
46	1	2	4	8	16	32	.017
47	1	2	4	8	16	32	.016
48	1	2	4	8	16	32	.015
49	1	2	4	8	16	32	.014
50	1	2	4	8	16	32	.013
51	1	2	4	8	16	32	.012
52	1	2	4	8	16	32	.011
53	1	2	4	8	16	32	.010
54	1	2	4	8	16	32	.009
55	1	2	4	8	16	32	.008
56	1	2	4	8	16	32	.007
57	1	2	4	8	16	32	.006
58	1	2	4	8	16	32	.005
59	1	2	4	8	16	32	.004
60	1	2	4	8	16	32	.003
61	1	2	4	8	16	32	.002
62	1	2	4	8	16	32	.001
63	1	2	4	8	16	32	.000
64	1	2	4	8	16	32	.000

### Pressure of Water on Each Square Foot of Surface at Different Depths

Vertical Depth in Feet	Pressure per Square Foot	Vertical Depth in Feet	Pressure per Square Foot	Vertical Depth in Feet	Pressure per Square Foot	Vertical Depth in Feet	Pressure per Square Foot	Vertical Depth in Feet	Pressure per Square Foot
1	62.5	11	687.5	21	1,312.5	31	1,937.5	41	2,562.5
2	125	12	750	22	1,375	32	2,000	42	2,625
3	187.5	13	812.5	23	1,437.5	33	2,062.5	43	2,687.5
4	250	14	875	24	1,500	34	2,125	44	2,750
5	312.5	15	937.5	25	1,562.5	35	2,187.5	45	2,812.5
6	375	16	1,000	26	1,625	36	2,250	46	2,875
7	437.5	17	1,062.5	27	1,687.5	37	2,312.5	47	2,937.5
8	500	18	1,125	28	1,750	38	2,375	48	3,000
9	562.5	19	1,187.5	29	1,812.5	39	2,437.5	49	3,062.5
10	625	20	1,250	30	1,875	40	2,500	50	3,125

### Pressure in Pounds per Square Inch for Different Heads of Water

At 62° F. 1 foot head=0.433 lb. per square inch,  $.433 \times 144 = 62.352$  lbs. per square foot

HEAD (FEET)	0	1	2	3	4	5	6	7	8	9
0	—	0.433	0.866	1.299	1.732	2.165	2.598	3.031	3.464	3.897
10	4.330	4.763	5.196	5.629	6.062	6.495	6.928	7.361	7.794	8.227
20	8.660	9.093	9.526	9.959	10.392	10.825	11.258	11.691	12.124	12.557
30	12.990	13.423	13.856	14.289	14.722	15.155	15.588	16.021	16.454	16.887
40	17.320	17.753	18.186	18.619	19.052	19.485	19.918	20.351	20.784	21.217
50	21.650	22.083	22.516	22.949	23.382	23.815	24.248	24.681	25.114	25.547
60	25.980	26.413	26.846	27.279	27.712	28.145	28.578	29.011	29.444	29.877
70	30.310	30.743	31.176	31.609	32.042	32.475	32.908	33.341	33.774	34.207
80	34.640	35.073	35.506	35.939	36.372	36.805	37.238	37.671	38.104	38.537
90	38.970	39.403	39.836	40.269	40.702	41.135	41.568	42.001	42.436	42.867

## Data for Calculating Horse Power of Water Heads

Pelton Water Wheel Company

The following table gives the horse power of 1 cubic foot of water per minute under heads from 1 up to 2,100 feet.

Heads in Feet	Horse Power	Heads in Feet	Horse Power	Heads in Feet	Horse Power	Heads in Feet	Horse Power
1	.001	220	.354	430	.692	1,050	1.690
20	.032	230	.370	440	.708	1,100	1.770
30	.048	240	.386	450	.724	1,150	1.851
40	.064	250	.402	460	.740	1,200	1.931
50	.080	260	.418	470	.756	1,250	2.012
60	.096	270	.434	480	.772	1,300	2.092
70	.112	280	.450	490	.788	1,350	2.173
80	.128	290	.466	500	.804	1,400	2.253
90	.144	300	.482	520	.827	1,450	2.334
100	.160	310	.499	540	.869	1,500	2.414
110	.177	320	.515	560	.901	1,550	2.495
120	.103	330	.531	580	.933	1,600	2.575
130	.209	340	.547	600	.965	1,650	2.656
140	.225	350	.563	650	1.046	1,700	2.736
150	.241	360	.579	700	1.126	1,750	2.817
160	.257	370	.505	750	1.207	1,800	2.897
170	.273	380	.611	800	1.287	1,850	2.978
180	.289	390	.627	850	1.368	1,900	3.058
190	.305	400	.643	900	1.448	1,950	3.139
200	.321	410	.660	950	1.529	2,000	3.219
210	.338	420	.670	1,000	1.609	2,100	3.380

## Circumferences of Circles, advancing by Eighths

DIAMETER (INCHES)	CIRCUMFERENCES							
	0	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$
0	—	0.3927	0.7854	1.178	1.570	1.963	2.356	2.748
1	3.1416	3.531	3.927	4.319	4.712	5.105	5.497	5.890
2	6.283	6.675	7.068	7.461	7.854	8.246	8.639	9.032
3	9.424	9.817	10.21	10.60	10.99	11.38	11.78	12.17
4	12.56	12.95	13.35	13.74	14.13	14.52	14.92	15.31
5	15.70	16.10	16.49	16.88	17.27	17.67	18.06	18.45
6	18.84	19.24	19.63	20.02	20.42	20.81	21.20	21.59

Circum. of a circle — dia.  $\times$  3.1416.

### Electrical Definitions

**OHM.** — The practical unit of electrical resistance. It is the resistance of a column of mercury one square millimeter in section, 106 centimeters long, at a temperature of 32° Fahr. This is about equivalent to the resistance of 1,000 ft. of No. 10 (B. & S. gage) pure copper wire of a temperature of 75°.

**AMPERE.** — The practical unit of electrical current. It is the current produced by an electromotive force of one volt in a circuit having a resistance of one ohm. It is the unit of volume or strength of the electric current.

**VOLT.** — The practical unit of electromotive force or a unit of pressure.

**VOLTAGE.** — The electromotive force of a circuit reckoned in volts. It is this electromotive force (E. M. F.) which causes a current to flow in a closed circuit.

**WATT.** — The practical unit of electrical power or rate of working. It is the power due to the current of one ampere flowing under an electromotive force of one volt equal, approximately, to 1/746 of one H. P.

**KILOWATT.** — A unit of electrical power equal to 1,000 watts. Electrical power is usually expressed in kilowatts. A kilowatt equals 1.34 H. P.

**ALTERNATING CURRENT.** — A succession of electrical currents which rise and fall in strength and flow alternately in opposite directions at regular intervals. The currents or impulses vary in intensity.

**DIRECT CURRENT.** — An electrical current constant in direction, though not necessarily so in value.

**CONTINUOUS CURRENT.** — A direct current constant in both value and direction, as a result of constant pressure.

**CANDLE POWER.** — The standard candle by which all lights are measured is legally held to be a sperm candle consuming 120 grains of wax per hour. In practical measurements standardized incandescent lamps are more reliable and accurate than the primary standard. According to experiments made by the government of the United States a one candle power white light is visible at a distance of a little more than a mile; one of three candle power is visible at two miles.

In 1909 a photometric unit for an international candle power was established by agreement among Great Britain, France, and America, and approved by other countries. This new unit is 1.6 per cent. less than the candle hitherto the standard in the United States.

**LOAD FACTOR.** — The load factor of a machine, plant, or system, is the ratio of the average power to the maximum power during a certain period of time. The average power is taken over a certain interval of time, such as a day or a year, and the maximum is taken over a short interval of the maximum load within that interval.

## Standard Units of Capacity

<i>a.</i> Boilers <sup>1</sup> . . . . .	{ One pound of water evaporated into dry steam from and at 212 deg. per hour.
<i>b.</i> Reciprocating Steam Engines . . . . .	{ One indicated horse power developed in the main cylinders.
<i>c.</i> Steam Turbines . . . . .	{ One brake horse power delivered by the main shaft.
<i>d.</i> Turbo-generators (including engine-driven generators) . . . . .	{ One kilowatt delivered at the generator terminals, <sup>2</sup> not including kilowatts used by exciter. <sup>3</sup>
<i>e.</i> Pumping Machinery . . . . .	{ One gallon of water discharged to the force main in 24 hr.
	{ One gallon of water discharged per min. <sup>4</sup>
	{ One water horse power delivered to the force main, based on the total head, including suction.
<i>f.</i> Compressors, Blowers and Fans . . . . .	{ One cu. ft. of air at 62 deg. and 30 in. <sup>5</sup>
	{ One air horse power.
<i>g.</i> Locomotives . . . . .	{ One indicated horse power developed in the main cylinders.
	{ One dynamometer horse power delivered to the draw-bar.
<i>h.</i> Gas Producers . . . . .	{ One pound of dry fuel of given quality consumed per hour.
	{ One cu. ft. per hour of dry gas having a stated quality at 60 deg. and 30 in.
<i>i.</i> Gas and Oil Engines . . . . .	{ One brake horse power delivered by the main shaft.
	{ One indicated horse power developed in the engine cylinder.
	{ One brake horse power delivered by the main shaft.
<i>j.</i> Waterwheels . . . . .	{ One kilowatt delivered at the generator terminals, <sup>2</sup> not including kilowatts used by exciter. <sup>3</sup>

<sup>1</sup> A subsidiary unit which may be used for stationary boilers is a "Boiler Horse Power," or 34½ lbs. of water evaporated from and at 212 deg. per hour, *i.e.*, from water at 212 deg. into steam at the same temperature. The unit called "Myriawatt" has been suggested by some engineers as a unit of boiler capacity. It is 2 per cent greater than the "Boiler Horse Power" and is equivalent to 34,150 heat units per hour, the "Boiler Horse Power" being 33,479 heat units per hour.

<sup>2</sup> If switchboard instruments are used for the electrical measurements, correction should be made for the drop in voltage between generator and switchboard, unless the drop is so small as to be negligible.

<sup>3</sup> If the exciter current is taken from an outside source the kw. thus supplied, including field rheostat losses, are to be deducted from the total output. Likewise the kw. used by separately driven ventilating fan.

<sup>4</sup> This unit applies to small pumps and some classes of large-sized pumps.

<sup>5</sup> 30 in. mercury barometer refers in round numbers to a standard atmosphere at 62 deg. In exact figures, the standard atmosphere is 29.951 in. of mercury at 62 deg.

## Heating Formulæ

### TO FIND AMOUNT OF RADIATION REQUIRED.

Mill's rule, sometimes called the rule "2-20-200," is as follows: "To find the amount of radiation required to heat a room with low-pressure steam to 70 degrees Fahr., when the outside temperature is at zero, allow 1 sq. ft. of radiation for every 200 cu. ft. of contents, 1 sq. ft. of radiation for every 20 sq. ft. of outside wall surface, and 1 sq. ft. of radiation for every 2 sq. ft. of glass surface (counting outside doors as glass surface). The sum of these results will be the amount of radiation required."

For hot water, add 60 per cent to the results obtained by rule for low-pressure steam; for semi-direct (direct-indirect) radiation, add 25 per cent; for indirect steam, add 50 per cent; for indirect hot water, add 75 per cent to the amount of direct radiation obtained by rule.

These rules do not take into consideration the factors of extraordinary exposure, and such additions should be made to the figures obtained as will compensate for such extraordinary heat losses.

It is considered to be excellent practice to add 10 per cent to the radiation figures for rooms having a northern, northwestern, or western exposure, and when a building is heated intermittently to increase the radiation about 25 per cent, and, provided the building is loosely constructed or without proper weather protection, the amount of radiation figured must be strengthened accordingly.

As an example of estimating, we will consider a room 12 ft. x 16 ft. in area, having a ceiling 10 ft. high; the room contains two single windows 3 ft. x 6 ft. and one large window 5 ft. x 6 ft.:

$$\begin{array}{r} 3 \times 6 = 18 \times 2 = 36 \\ 5 \times 6 = 30 \quad = 30 \\ \hline \end{array}$$

66 sq. ft. windows.

$$\begin{array}{r} 12 + 16 \times 10 = 280 \text{ sq. ft. exposed wall.} \\ 12 \times 16 \times 10 = 1,920 \text{ cu. ft. contents.} \\ 66 \div 2 = 33 \\ 280 \div 20 = 14 \\ 1,920 \div 200 = 9.6 \\ \hline \end{array}$$

56.6 sq. ft. direct radiation required.

The room requires 33 sq. ft. of direct radiation low-pressure steam to compensate for heat losses through cooling by the window glass; 14 sq. ft. for loss through cooling by exposed wall surface, and 9.6 sq. ft. to make up for the loss due to leakage, which is one complete change of air in the room hourly. If hot water is used, add 60 per cent = 90.5 sq. ft.

NOTE. — In practice I have found invariably the amount of heating surface required was somewhat less than would be called for in following the above rule. I consider that the rule is too generous except in greatly exposed situations. — C. H. FISH.



**Manila Rope (Medium Lay)**

U. S. Standard Specification No. 61

Approximate Diameter (Inches)	Circumference (Inches)	Approximate Feet per Coil	Approximate Gross Weight per Coil (Pounds)	Maximum Net Weight per Foot of Rope (Pounds)	Minimum Feet per Pound	Minimum Breaking Strength (Pounds)	200 D <sup>2</sup> (Pounds)
$\frac{3}{16}$ (6 yarns)	$\frac{1}{2}$	3,000	45	.015	66.6	590	7.0
$\frac{1}{4}$ (6 yarns)	$\frac{3}{4}$	2,750	55	.020	50.0	700	12.5
$\frac{5}{16}$ (9 yarns)	1	2,250	65	.029	34.5	1,200	19.5
$\frac{3}{8}$ (12 yarns)	$1\frac{1}{8}$	1,620	66	.041	24.4	1,450	28.2
$\frac{7}{16}$ (15 yarns)	$1\frac{1}{4}$	1,200	70	.054	18.5	1,750	38.2
$\frac{15}{32}$ (18 yarns)	$1\frac{3}{8}$	1,200	80	.064	15.6	2,100	44.0
$\frac{1}{2}$ (21 yarns)	$1\frac{1}{2}$	1,200	90	.074	13.5	2,450	50.0
$\frac{9}{16}$	$1\frac{3}{4}$	1,200	126	.103	9.71	3,150	63.4
$\frac{5}{8}$	2	1,200	160	.131	7.53	4,000	78.2
$\frac{3}{4}$	$2\frac{1}{4}$	1,200	198	.162	6.17	4,900	112.5
$\frac{13}{16}$	$2\frac{1}{2}$	1,200	234	.191	5.23	5,900	132.0
$\frac{7}{8}$	$2\frac{3}{4}$	1,200	270	.221	4.55	7,000	153.0
1	3	1,200	324	.265	3.77	8,200	200.0
$1\frac{1}{16}$	$3\frac{1}{4}$	1,200	378	.309	3.24	9,500	226.0
$1\frac{1}{8}$	$3\frac{1}{2}$	1,200	432	.353	2.83	11,000	252.0
$1\frac{1}{4}$	$3\frac{3}{4}$	1,200	504	.412	2.43	12,500	312.0
$1\frac{5}{16}$	4	1,200	576	.470	2.13	14,200	345.0
$1\frac{3}{8}$	$4\frac{1}{2}$	1,200	648	.529	1.89	16,000	378.0
$1\frac{1}{2}$	$4\frac{1}{2}$	1,200	720	.588	1.70	17,500	450.0
$1\frac{9}{16}$	$4\frac{3}{4}$	1,200	810	.662	1.51	19,500	490.0
$1\frac{5}{8}$	5	1,200	900	.735	1.36	21,500	528.0
$1\frac{3}{4}$	$5\frac{1}{2}$	1,200	1,080	.882	1.13	25,500	612.0
2	6	1,200	1,296	1.06	.943	30,000	800.0
$2\frac{1}{16}$	$6\frac{1}{2}$	1,200	1,500	1.23	.813	34,000	850.0
$2\frac{1}{4}$	7	1,200	1,764	1.44	.694	38,500	1,012.0
$2\frac{1}{2}$	$7\frac{1}{2}$	1,200	2,016	1.65	.606	43,500	1,250.0
$2\frac{5}{8}$	8	1,200	2,304	1.88	.532	49,000	1,380.0
$2\frac{7}{8}$	$8\frac{1}{2}$	1,200	2,580	2.11	.474	55,000	1,660.0
3	9	1,200	2,916	2.38	.420	61,000	1,800.0
$3\frac{1}{8}$	$9\frac{1}{2}$	1,200	3,240	2.65	.377	67,000	1,950.0
$3\frac{1}{4}$	10	1,200	3,600	2.94	.340	73,000	2,120.0
$3\frac{5}{16}$	$10\frac{1}{2}$	1,200	4,000	3.25	.308	79,600	2,190.0
$3\frac{1}{2}$	11	1,200	4,400	3.57	.280	86,400	2,450.0
$3\frac{5}{8}$	$11\frac{1}{2}$	1,200	4,800	3.90	.256	93,600	2,630.0
$3\frac{3}{4}$	12	1,200	5,200	4.24	.236	101,000	2,812.0



### Sag of Manila Rope on Driving and Slack Sides

Distance Between Pulleys (Feet)	Sag on Driving Side, All Speeds (Feet)	VELOCITY (FEET PER MINUTE)				
		3,000	4,000	4,500	5,000	5,500
		Sag on Slack Side				
30	.19	.45	.39	.36	.33	.30
40	.34	.80	.69	.64	.59	.53
50	.53	1.2	1.1	1.0	.92	.84
60	.76	1.8	1.7	1.4	1.3	1.2
70	1.0	2.4	2.1	1.9	1.7	1.6
80	1.4	3.2	2.9	2.5	2.3	2.1
90	1.7	4.0	3.5	3.2	3.0	2.7
100	2.1	5.0	4.3	4.0	3.7	3.3
120	3.0	7.2	6.2	5.7	5.3	4.8
140	4.1	9.9	8.5	7.8	7.2	6.6
160	5.4	12.9	11.1	10.2	9.5	8.6

### Horse Power transmitted by Different Sized Ropes at Various Speeds

DIAMETER OF ROPE (INCHES)	VELOCITY (FEET PER MINUTE)										
	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	6,000
$\frac{3}{4}$	2.3	3.3	4.3	5.2	6.0	6.6	7.2	7.3	7.4	7.3	6.9
$\frac{7}{8}$	3.0	4.5	5.9	7.0	8.2	9.0	9.6	9.8	10.0	9.6	9.0
1	4.0	5.9	7.7	9.2	10.6	11.8	12.7	12.9	13.0	12.7	12.0
$1\frac{1}{8}$	5.0	7.5	9.7	11.6	13.5	14.9	16.0	16.3	16.7	16.5	15.3
$1\frac{1}{4}$	6.3	9.1	12.0	14.3	16.7	18.5	20.0	20.2	20.7	20.1	18.9
$1\frac{3}{8}$	7.5	10.8	14.4	17.4	20.0	22.1	23.7	24.5	24.6	24.0	22.3
$1\frac{1}{2}$	9.0	13.5	17.4	20.7	23.0	26.3	28.7	29.0	29.5	28.6	26.7
$1\frac{5}{8}$	10.5	15.5	20.1	24.3	27.9	30.8	32.9	34.1	34.3	33.3	31.0
$1\frac{3}{4}$	12.3	18.0	23.6	28.2	32.7	36.4	38.5	39.4	40.5	38.7	36.0
2	16.0	23.2	30.6	36.8	42.5	46.7	50.0	51.7	52.8	50.6	47.3
$2\frac{1}{4}$	20.0	29.6	38.6	46.6	53.6	59.2	63.6	65.8	66.3	64.4	60.3
$2\frac{1}{2}$	25.0	36.6	47.7	57.5	66.0	71.2	78.0	80.0	81.0	79.0	73.8

### Diameter of Line Shafts

The table on the opposite page applies to Line Shafts with bearings 8 feet apart. To find the proper diameter for Line Shafts with bearings any other distance apart, multiply the diameter given in the table on the opposite page by the Constant Number corresponding to the distance between bearings in the table below.

Distance Between Bearings		Constant Number	Distance Between Bearings		Constant Number
Feet	Inches		Feet	Inches	
2	0	.354	7	6	.9527
2	6	.418	8	0	1.00
3	0	.479	8	6	1.0465
3	6	.538	9	0	1.092
4	0	.595	9	6	1.137
4	6	.6495	10	0	1.182
5	0	.7029	10	6	1.226
5	6	.755	10	9	1.248
6	0	.806	11	0	1.269
6	6	.856	11	6	1.315
7	0	.905	12	0	1.355

### Card Clothing Data

English Counts	Points per Square Foot	American Number of Wire
60s	43,200	28
70s	50,400	30
80s	57,600	31
90s	64,800	32
100s	72,000	33
110s	79,200	34
120s	86,400	35
130s	93,600	36

### Counts ordinarily used

	Cylinders	Doffers	Flats
Coarse yarns . . .	90s to 100s	100s to 110s	90s to 100s
Medium yarns . . .	100s to 110s	110s to 120s	100s to 110s

# Horse Power transmitted by Cold Rolled Shafting. Second Movers or Line Shafts with Bearings 8 Feet Apart

DIAMETER OF SHAFT	REVOLUTIONS PER MINUTE								
	100	150	200	225	250	275	300	325	350
	Horse Power								
$1\frac{1}{16}$	15	22	29	33	36	40	44	47	51
$2\frac{3}{16}$	21	31	42	47	52	58	63	68	73
$2\frac{7}{16}$	29	43	58	65	72	80	87	94	101
$2\frac{11}{16}$	39	58	78	87	97	107	116	126	136
$2\frac{15}{16}$	51	76	101	114	127	139	152	165	177
$3\frac{3}{16}$	65	97	130	146	162	178	194	210	227
$3\frac{7}{16}$	81	122	162	183	203	223	244	264	284
$3\frac{11}{16}$	100	150	201	226	251	276	301	326	351
$3\frac{15}{16}$	122	183	244	275	305	336	366	397	427
$4\frac{3}{16}$	147	220	294	330	367	404	441	477	514
$4\frac{7}{16}$	175	262	350	393	437	481	524	568	612
$4\frac{11}{16}$	206	309	412	463	515	566	618	669	721
$4\frac{15}{16}$	241	361	481	542	602	662	722	782	843
$5\frac{3}{16}$	279	419	559	629	698	768	838	908	978
$5\frac{7}{16}$	322	482	643	724	804	884	965	1,045	1,125
$5\frac{11}{16}$	368	552	736	828	920	1,012	1,104	1,196	1,288
$5\frac{15}{16}$	419	628	837	942	1,047	1,151	1,256	1,361	1,465
$6\frac{3}{16}$	474	711	948	1,066	1,185	1,303	1,421	1,540	1,658
$6\frac{7}{16}$	534	800	1,067	1,201	1,334	1,467	1,601	1,734	1,867
$6\frac{11}{16}$	598	897	1,196	1,346	1,496	1,645	1,795	1,944	2,094
$6\frac{15}{16}$	668	1,002	1,336	1,503	1,669	1,836	2,003	2,170	2,337
$7\frac{3}{16}$	743	1,114	1,485	1,671	1,857	2,042	2,228	2,414	2,599
$7\frac{7}{16}$	823	1,234	1,646	1,851	2,057	2,263	2,468	2,674	2,880
$7\frac{11}{16}$	909	1,363	1,817	2,045	2,272	2,499	2,726	2,953	3,180
$7\frac{15}{16}$	1,000	1,500	2,000	2,250	2,501	2,751	3,001	3,251	3,501

The above table is figured by the following rule: Multiply the cube of the diameter of the shaft by the revolutions per minute and divide by 50.

**Horse Power of Single Belts**  
**Pulleys, 100 R. P. M.; Belt Contact,  $\frac{1}{2}$  Circumference**

DIAMETER OF PULLEY	WIDTH OF SINGLE BELT IN INCHES							
	3	4	5	6	8	10	12	14
6	.59	.78	.98	1.2	1.6	2.0	2.4	2.7
7	.69	.92	1.2	1.4	1.8	2.3	2.8	3.2
8	.78	1.0	1.3	1.6	2.1	2.6	3.1	3.7
9	.88	1.2	1.5	1.8	2.3	2.9	3.5	4.1
10	.98	1.3	1.6	2.0	2.6	3.3	3.9	4.6
11	1.1	1.4	1.8	2.2	2.9	3.6	4.3	5.0
12	1.2	1.6	2.0	2.4	3.1	3.9	4.7	5.5
13	1.3	1.7	2.1	2.5	3.4	4.2	5.1	5.9
14	1.4	1.8	2.3	2.8	3.7	4.6	5.5	6.4
15	1.5	2.0	2.5	3.0	3.9	4.9	5.9	6.9
16	1.6	2.1	2.6	3.1	4.2	5.2	6.3	7.3
17	1.7	2.2	2.8	3.3	4.5	5.6	6.7	7.8
18	1.8	2.4	3.0	3.5	4.7	5.9	7.1	8.3
19	1.9	2.5	3.1	3.7	5.0	6.2	7.5	8.7
20	2.0	2.6	3.3	3.9	5.2	6.6	7.9	9.2
21	2.1	2.7	3.4	4.1	5.5	6.9	8.2	9.6
22	2.2	2.9	3.6	4.3	5.8	7.2	8.6	10.1
23	2.3	3.0	3.8	4.5	6.0	7.5	9.0	10.5
24	2.4	3.1	3.9	4.7	6.3	7.9	9.4	11.0
25	2.5	3.3	4.1	4.9	6.6	8.2	9.8	11.5
26	2.6	3.4	4.3	5.1	6.8	8.5	10.2	11.9
27	2.7	3.5	4.4	5.3	7.1	8.8	10.6	12.4
28	2.8	3.7	4.6	5.5	7.3	9.2	11.0	12.8
29	2.9	3.8	4.8	5.7	7.6	9.5	11.4	13.3
30	2.9	3.9	4.9	5.9	7.9	9.8	11.8	13.7
31	3.0	4.1	5.1	6.1	8.1	10.2	12.2	14.2
32	3.1	4.2	5.2	6.3	8.4	10.5	12.6	14.7
33	3.2	4.3	5.4	6.5	8.6	10.8	13.0	15.1
34	3.3	4.4	5.6	6.7	8.9	11.1	13.3	15.5
35	3.4	4.6	5.7	6.9	9.2	11.5	13.7	16.0
36	3.5	4.7	5.9	7.1	9.4	11.8	14.2	16.5
37	3.6	4.8	6.1	7.3	9.7	12.1	14.5	16.9
38	3.7	5.0	6.2	7.4	9.9	12.4	14.9	17.4
39	3.8	5.1	6.4	7.7	10.2	12.8	15.3	17.9
40	3.9	5.2	6.6	7.9	10.5	13.1	15.7	18.3
42	4.1	5.5	6.9	8.2	11.0	13.7	16.4	19.2
44	4.3	5.8	7.2	8.6	11.5	14.4	17.3	20.2
46	4.5	6.0	7.5	9.0	12.0	15.0	18.0	21.0
48	4.7	6.3	7.9	9.4	12.6	15.7	18.8	22.0
50	4.9	6.5	8.2	9.8	13.0	16.3	19.6	22.8
52	5.1	6.8	8.5	10.2	13.6	17.0	20.4	23.8
54	5.3	7.1	8.8	10.6	14.2	17.7	21.2	24.7

NOTE. — The above table is based on one horse power per inch of width for each 800 feet per minute belt speed. The horse power for other pulley speeds in proportion.

**Horse Power of Double Belts**  
**Pulleys, 100 R. P. M.; Belt Contact,  $\frac{1}{2}$  Circumference**

DIAMETER OF PULLEY	WIDTH OF DOUBLE BELT IN INCHES							
	3	4	5	6	7	8	9	10
18	2.8	3.8	4.7	5.7	6.6	7.6	8.5	9.4
19	3.0	4.0	5.0	6.0	7.0	8.0	9.0	9.9
20	3.1	4.2	5.2	6.3	7.3	8.4	9.4	10.5
21	3.3	4.4	5.5	6.6	7.7	8.8	9.9	11.0
22	3.5	4.6	5.8	6.9	8.1	9.2	10.4	11.5
23	3.6	4.8	6.0	7.2	8.4	9.6	10.8	12.0
24	3.8	5.0	6.3	7.6	8.8	10.1	11.3	12.6
25	3.9	5.2	6.5	7.8	9.2	10.4	11.8	13.1
26	4.1	5.4	6.8	8.2	9.5	10.9	12.2	13.6
27	4.2	5.7	7.1	8.5	9.9	11.3	12.7	14.1
28	4.4	5.9	7.3	8.8	10.3	11.7	13.2	14.7
29	4.6	6.1	7.6	9.1	10.6	12.1	13.7	15.2
30	4.7	6.3	7.9	9.4	11.0	12.6	14.1	15.7
31	4.9	6.5	8.1	9.7	11.4	13.0	14.6	16.2
32	5.0	6.7	8.4	10.0	11.7	13.4	15.1	16.7
33	5.2	6.9	8.6	10.4	12.1	13.8	15.5	17.3
34	5.3	7.1	8.9	10.7	12.5	14.2	16.0	17.8
35	5.5	7.3	9.2	11.0	12.8	14.7	16.5	18.3
36	5.7	7.5	9.4	11.3	13.2	15.1	17.0	18.9
37	5.8	7.7	9.7	11.6	13.6	15.5	17.4	19.4
38	6.0	8.0	10.0	11.9	13.9	15.9	17.9	19.9
39	6.1	8.2	10.2	12.3	14.3	16.3	18.4	20.4
40	6.3	8.4	10.5	12.6	14.7	16.8	18.8	20.9
42	6.6	8.8	11.0	13.2	15.4	17.6	19.8	22.0
44	6.9	9.2	11.5	13.8	16.1	18.4	20.7	23.0
46	7.2	9.6	12.0	14.5	16.9	19.3	21.7	24.1
48	7.5	10.1	12.6	15.1	17.6	20.1	22.6	25.1
50	7.9	10.5	13.1	15.7	18.3	20.9	23.6	26.2
52	8.2	10.9	13.6	16.3	19.1	21.8	24.5	27.2
54	8.5	11.3	14.1	17.0	19.8	22.6	25.4	28.3
56	8.8	11.7	14.7	17.6	20.5	23.5	26.4	29.3
58	9.1	12.1	15.2	18.2	21.3	24.3	27.3	30.4
60	9.4	12.6	15.7	18.8	22.0	25.1	28.3	31.4
64	10.1	13.4	16.8	20.1	23.5	26.8	30.2	33.5
68	10.7	14.2	17.8	21.4	24.9	28.5	32.0	35.6
72	11.3	15.1	18.8	22.6	26.4	30.2	33.9	37.7
76	11.9	15.9	19.9	23.9	27.9	31.8	35.8	39.8
80	12.6	16.8	20.9	25.1	29.3	33.5	37.7	41.9
84	13.2	17.6	22.0	26.4	30.8	35.2	39.6	44.0
88	13.8	18.4	23.0	27.6	32.3	36.9	41.5	46.1
92	14.5	19.3	24.1	28.9	33.7	38.5	43.3	48.2
96	15.1	20.1	25.1	30.2	35.2	40.2	45.2	50.3

NOTE. — The above table is based on one horse power per inch of width for each 500 feet per minute belt speed. The horse power for other pulley speeds in proportion.

**Horse Power of Double Belts — (Concluded)**  
**Pulleys, 100 R. P. M.; Belt Contact,  $\frac{1}{2}$  Circumference**

DIAMETER OF PULLEY	WIDTH OF DOUBLE BELT IN INCHES							
	12	14	16	18	20	22	24	26
18	11.3	13.2	15.1	17.0	18.9	20.7	22.6	24.5
19	11.9	13.9	15.9	17.9	19.9	21.9	23.9	25.9
20	12.6	14.7	16.8	18.8	20.9	23.0	25.1	27.2
21	13.2	15.4	17.6	19.8	22.0	24.2	26.4	28.6
22	13.8	16.1	18.4	20.7	23.0	25.3	27.6	29.9
23	14.4	16.8	19.3	21.7	24.1	26.5	28.9	31.3
24	15.1	17.6	20.1	22.6	25.1	27.6	30.2	32.7
25	15.7	18.3	20.9	23.5	26.2	28.7	31.3	34.0
26	16.3	19.1	21.8	24.5	27.2	29.9	32.7	35.4
27	17.0	19.8	22.6	25.4	28.3	31.1	33.9	36.8
28	17.6	20.5	23.5	26.4	29.3	32.2	35.2	38.1
29	18.2	21.3	24.3	27.3	30.4	33.4	36.4	39.5
30	18.8	22.0	25.1	28.3	31.4	34.6	37.7	40.8
31	19.5	22.7	25.9	29.2	32.4	35.7	38.9	42.2
32	20.1	23.4	26.8	30.1	33.5	36.8	40.2	43.6
33	20.7	24.2	27.6	31.1	34.6	38.0	41.5	44.9
34	21.4	24.9	28.5	32.0	35.6	39.2	42.7	46.3
35	22.0	25.7	29.3	33.0	36.6	40.3	44.0	47.6
36	22.6	26.4	30.1	33.9	37.7	41.5	45.2	49.0
37	23.2	27.1	31.0	34.9	38.7	42.6	46.5	50.4
38	23.9	27.9	31.8	35.8	39.8	43.8	47.8	51.7
39	24.5	28.6	32.7	36.7	40.8	44.9	49.0	53.1
40	25.1	29.3	33.5	37.7	41.9	46.1	50.3	54.5
42	26.4	30.8	35.2	39.6	44.0	48.4	52.8	57.2
44	27.6	32.2	36.8	41.4	46.1	50.7	55.3	59.9
46	28.9	33.7	38.5	43.4	48.2	53.0	57.8	62.6
48	30.1	35.2	40.2	45.2	50.3	55.3	60.3	65.3
50	31.4	36.7	41.9	47.1	52.4	57.6	62.8	68.1
52	32.7	38.2	43.5	49.0	54.4	59.9	65.3	70.8
54	33.9	39.6	45.2	50.9	56.5	62.2	67.9	73.5
56	35.2	41.0	46.9	52.8	58.6	64.5	70.4	76.2
58	36.4	42.5	48.6	54.6	60.7	66.8	72.9	78.9
60	37.7	44.0	50.2	56.5	62.8	69.1	75.4	81.7
64	40.2	46.9	53.6	60.3	67.0	73.7	80.4	87.1
68	42.7	49.8	57.0	64.1	71.2	78.3	85.4	92.6
72	45.2	52.8	60.3	67.9	75.4	82.9	90.5	98.0
76	47.7	55.7	63.7	71.6	79.6	87.5	95.5	103.5
80	50.3	58.6	67.0	75.4	83.8	92.1	100.5	108.9
84	52.8	61.6	70.4	79.2	87.9	96.7	105.5	114.4
88	55.3	64.5	73.7	82.9	92.2	101.4	110.6	119.8
92	57.8	67.4	77.1	86.7	96.3	106.0	115.6	125.2
96	60.3	70.4	80.4	90.5	100.5	110.6	120.6	130.7

NOTE. — The above table is based on one horse power per inch of width for each 500 feet per minute belt speed. The horse power for other pulley speeds in proportion.

### Approximate Power required for Cotton Machinery

	Horse Power
Bale Breaker . . . . .	3-5
Self-Feeding Openers . . . . .	3
Combined Self-Feeding Opener and Single Beater Breaker Lap- per . . . . .	9
40" Single Beater Intermediate or Finisher Lapper . . . . .	5
Two-Beater Intermediate or Finisher Lapper . . . . .	10-12
Waste Picker . . . . .	3
Thread Extractor with Condenser . . . . .	2
40" Revolving Flat Card, Production 750 lbs. per week . . . . .	1
Sliver Lap Machine . . . . .	$\frac{1}{2}$
Ribbon Lap Machine . . . . .	1
Comber 6-head . . . . .	$\frac{1}{2}$
Comber 8-head . . . . .	$\frac{2}{3}$
Drawing Frames 4 to 5 deliveries per . . . . .	1
Slubber Frames 40 to 45 spindles per . . . . .	1
Intermediate Frames 55 to 60 spindles per . . . . .	1
Roving Frames 70 to 85 spindles per . . . . .	1
Jack or Fine Roving Frames 100 spindles per . . . . .	1
Ring Spinning Frames:	
6,000 r. p. m. (Filling) 110 spindles per . . . . .	1
7,000 r. p. m. (Filling) 100 spindles per . . . . .	1
8,000 r. p. m. (Warp) 90 spindles per . . . . .	1
8,500 r. p. m. (Warp) 80 spindles per . . . . .	1
9,000 r. p. m. (Warp) 70 spindles per . . . . .	1
10,000 r. p. m. (Warp) 60 spindles per . . . . .	1
Mule, 720 spindles per . . . . .	$7\frac{1}{2}$
Twisters 10 to 50 spindles per . . . . .	1
Cone Winders 65 drums per . . . . .	1
Spoolers 200 to 300 spindles per . . . . .	1
Warpers . . . . .	$\frac{1}{4}-\frac{1}{2}$
Ball Warpers . . . . .	$\frac{1}{2}$
Slasher . . . . .	2
Looms:	
32" and 36" . . . . .	$\frac{1}{4}$
40" and 48" . . . . .	$\frac{1}{3}$
80" . . . . .	$\frac{1}{2}$
92" to 108" . . . . .	$\frac{3}{4}-1$
Brusher . . . . .	1
Brusher and Shearer . . . . .	3
Cloth Folder . . . . .	$\frac{1}{3}-\frac{1}{2}$

NOTE. — The above figures are only approximate, but they give a fair average of the power required to drive the various machines. The speed production and many other conditions affect the power consumed. For Friction of Belting and Shafting add from 18 to 22 per cent.

## Common and Range of Production for Cotton Machinery

Compiled by Professor Stephen E. Smith

MACHINE	Range of Draft	Common Draft	Range of Production (10 Hours)	Common Production (10 Hours)	Per Cent Waste	Range of Speeds R. P. M.	Common Speeds R. P. M.	Range of Sizes	Common Sizes	Per Cent Stops
Bale opener . . .	—	—	4,000-10,000	5,000-7,000	—	—	—	—	—	10
Breaker picker . .	—	2	1,500-3,000	2,000	2.5-3	9" Cal. Roll 4-8	6	10-20	13-16	5
Intermediate picker	3-5	4	1,000-2,500	1,200-1,600	1.5-2	4-8	6	10-20	12-15	5
Finisher picker . .	3-5	4	1,000-2,500	1,200-1,600	1.5-2	4-8	6	10-20	11-14	10
Card . . . . .	8.5-130	90-110	30-200	85-150	4-12 (5-6)	27" Doffer 4-18	6-12	Grains 30-100	50-60	5
Sliver lapper (20 ends)	1 <sup>3</sup> -2 <sup>1</sup> <sub>2</sub>	2-2 <sup>1</sup> <sub>4</sub>	750-1,200	1,000	1	5" Press Roll 90-100	90-100	350-800	450-600	25
Ribbon lapper (4 head)	3-5	4	750-1,200	1,000	1	90-100	90-100	350-800	450-600	25
Comb (8 head) . .	40-80	60	80-150	100-128	Noil 8-30 Common 12-18	Nips 90-130	100	Grains 40-70	50-60	5
Draw frame (6 ends)	4-8	6	75-300	100-150	Less than 1	Front Roll 27.5-37.5	300-330	40-70	50-60	20-25
Slubber . . . . .	3-5	4	Production figures omitted on account of great variety as roving sizes change		Less than 1	Sp. Speed 600-800	Sp. Speed 600-800	Hank 25-1.0	Hank 4-1.0	15-20
Intermediate . . .	4-6	5			Less than 1	800-1,000	800-1,000	1-2.5	1-2.5	12-15
Fine . . . . .	5-7	6			Less than 1	1,000-1,200	1,000-1,200	2.5-6.0	2.5-6.0	4-12
Jack . . . . .	6-8	7			Less than 1	1,200-1,500	1,200-1,500	6 Hank and up	6 Hank and up	7-9
Ring spinning . .	6-20	8-12			Less than 1	4,000-10,000	4,000-10,000	4's-140	4's-140	10
Mule . . . . .	6-20	8-12			Less than 1	4,000-10,000	4,000-10,000	15's-400	15's-400	12



### Conversion Table of Cotton Yarn Numbers

Metric Number	English Number	French Number	Austrian Number	Netherlands Number
1.	0.59	0.5	0.483	0.651
1.694	1.	0.8475	0.818	1.103
2.	1.18	1.	0.966	1.302
2.07	1.222	1.035	1.	1.3478
1.535	0.90629	.768	.74193	1.

### Spinning Frame Production

To find 100 per cent Production per Spindle, in Pounds, from Speed of Front Roll:

$$\frac{\text{Circum. of Front Roll} \times \text{R. P. M.} \times \text{Minutes} \times \text{Hours}}{36 \text{ inches} \times 840 \times \text{No. of Yarn}} = \text{Lbs. per spindle.}$$

EXAMPLE:

$$\frac{3.1416 \times 90 \times 60 \times 54}{36 \times 840 \times 52} = .582 \text{ Lbs. per spindle.}$$

### Roving Frame Production

To find 100 per cent Production of Roving Frames, in Hanks, from Speed of Front Roll:

$$\frac{\text{Circum. of Front Roll} \times \text{R. P. M.} \times \text{Minutes} \times \text{Hours}}{36 \text{ inches} \times 840} = \text{Hanks per spindle.}$$

EXAMPLE: Assume speed of front roll 80 r. p. m.  
Assume Circum. of front roll 3.927 inches.

$$\frac{3.927 \times 80 \times 60 \times 54}{36 \times 840} = 33.66 \text{ Hanks per spindle.}$$

### Roving Table

For numbering by the weight, in grains, of 12 yards; and showing twist per inch

Weight (Grains)	Hank Roving	Square Root	Twist Per Inch	Weight (Grains)	Hank Roving	Square Root	Twist Per Inch	Weight (Grains)	Hank Roving	Square Root	Twist Per Inch
400.00	.25	.500	.60	147.06	.68	.825	.99	81.97	1.22	1.105	1.33
384.61	.26	.510	.61	144.93	.69	.831	1.00	80.65	1.24	1.114	1.34
370.37	.27	.520	.62	142.86	.70	.837	1.00	79.37	1.26	1.122	1.35
357.14	.28	.529	.63	140.85	.71	.843	1.01	78.12	1.28	1.131	1.36
344.83	.29	.539	.65	138.89	.72	.849	1.02	76.92	1.30	1.140	1.37
333.33	.30	.548	.66	135.99	.73	.854	1.02	75.76	1.32	1.149	1.38
322.58	.31	.557	.67	135.14	.74	.860	1.03	74.63	1.34	1.158	1.39
312.50	.32	.566	.68	133.33	.75	.866	1.04	73.53	1.36	1.166	1.40
303.03	.33	.574	.69	131.58	.76	.872	1.05	72.46	1.38	1.175	1.41
294.12	.34	.583	.70	129.87	.77	.874	1.05	71.43	1.40	1.183	1.42
285.71	.35	.592	.71	128.21	.78	.883	1.06	70.42	1.42	1.192	1.43
277.78	.36	.600	.72	126.58	.79	.889	1.07	69.44	1.44	1.200	1.44
270.27	.37	.608	.73	125.00	.80	.894	1.07	68.49	1.46	1.208	1.45
263.16	.38	.616	.74	123.46	.81	.900	1.08	67.57	1.48	1.217	1.46
256.41	.39	.624	.75	121.95	.82	.906	1.09	66.67	1.50	1.225	1.47
250.00	.40	.632	.76	120.48	.83	.911	1.09	65.79	1.52	1.233	1.48
243.90	.41	.640	.77	119.05	.84	.917	1.10	64.94	1.54	1.241	1.49
238.10	.42	.648	.78	117.65	.85	.922	1.11	64.10	1.56	1.249	1.50
232.56	.43	.656	.79	116.28	.86	.927	1.11	63.29	1.58	1.257	1.51
227.27	.44	.663	.80	114.94	.87	.933	1.12	62.50	1.60	1.265	1.52
222.22	.45	.671	.80	113.64	.88	.938	1.13	61.73	1.62	1.273	1.53
217.39	.46	.678	.81	112.36	.89	.943	1.13	60.98	1.64	1.281	1.54
212.77	.47	.686	.82	111.11	.90	.949	1.14	60.24	1.66	1.288	1.55
208.33	.48	.693	.83	109.89	.91	.954	1.14	59.52	1.68	1.296	1.56
204.08	.49	.700	.84	108.70	.92	.959	1.15	58.82	1.70	1.304	1.56
200.00	.50	.707	.85	107.53	.93	.964	1.16	58.14	1.72	1.311	1.57
196.08	.51	.714	.86	106.38	.94	.970	1.16	57.47	1.74	1.319	1.58
192.31	.52	.721	.87	105.26	.95	.975	1.17	56.82	1.76	1.327	1.59
188.68	.53	.728	.87	104.17	.96	.980	1.18	56.18	1.78	1.334	1.60
185.19	.54	.735	.88	103.09	.97	.985	1.18	55.56	1.80	1.342	1.61
181.82	.55	.742	.89	102.04	.98	.990	1.19	54.95	1.82	1.349	1.62
178.57	.56	.748	.90	101.01	.99	.995	1.19	54.35	1.84	1.356	1.63
175.44	.57	.755	.91	100.00	1.00	1.000	1.20	53.76	1.86	1.364	1.64
172.41	.58	.762	.91	98.04	1.02	1.010	1.21	53.19	1.88	1.371	1.65
169.49	.59	.768	.92	96.15	1.04	1.020	1.22	52.63	1.90	1.378	1.65
166.67	.60	.775	.93	94.34	1.06	1.030	1.24	52.08	1.92	1.386	1.66
163.93	.61	.781	.94	92.59	1.08	1.039	1.25	51.55	1.94	1.393	1.67
161.29	.62	.787	.94	90.91	1.10	1.049	1.26	51.02	1.96	1.400	1.68
158.73	.63	.794	.95	89.29	1.12	1.058	1.27	50.51	1.98	1.407	1.69
156.25	.64	.800	.96	87.72	1.14	1.068	1.28	50.00	2.00	1.414	1.70
153.85	.65	.806	.97	86.21	1.16	1.077	1.29	49.50	2.02	1.421	1.71
151.52	.66	.812	.97	84.75	1.18	1.086	1.30	49.02	2.04	1.428	1.71
149.25	.67	.819	.98	83.33	1.20	1.095	1.31	48.54	2.06	1.435	1.72

**Roving Table — (Concluded)**

For numbering by the weight, in grains, of 12 yards; and showing twist per inch

Weight (Grains)	Hank Roving	Square Root	Twist Per Inch	Weight (Grains)	Hank Roving	Square Root	Twist Per Inch	Weight (Grains)	Hank Roving	Square Root	Twist Per Inch
48.08	2.08	1.442	1.73	34.01	2.94	1.715	2.06	14.29	7.00	2.646	3.17
47.62	2.10	1.449	1.74	33.78	2.96	1.721	2.07	14.08	7.10	2.665	3.20
47.17	2.12	1.456	1.75	33.56	2.98	1.726	2.07	13.89	7.20	2.683	3.22
46.73	2.14	1.463	1.76	33.33	3.00	1.732	2.08	13.70	7.30	2.702	3.24
46.30	2.16	1.470	1.76	32.26	3.10	1.761	2.11	13.51	7.40	2.720	3.26
45.87	2.18	1.476	1.77	31.25	3.20	1.789	2.15	13.33	7.50	2.739	3.29
45.45	2.20	1.483	1.78	30.30	3.30	1.817	2.18	13.16	7.60	2.757	3.31
45.05	2.22	1.490	1.79	29.41	3.40	1.844	2.21	12.99	7.70	2.775	3.33
44.64	2.24	1.497	1.80	28.57	3.50	1.871	2.24	12.82	7.80	2.793	3.35
44.25	2.26	1.503	1.80	27.78	3.60	1.897	2.28	12.66	7.90	2.811	3.37
43.86	2.28	1.510	1.81	27.03	3.70	1.924	2.31	12.50	8.00	2.828	3.39
43.48	2.30	1.517	1.82	26.32	3.80	1.949	2.34	12.35	8.10	2.846	3.42
43.10	2.32	1.523	1.83	25.64	3.90	1.975	2.37	12.20	8.20	2.864	3.44
42.74	2.34	1.530	1.84	25.00	4.00	2.000	2.40	12.05	8.30	2.881	3.46
42.37	2.36	1.536	1.84	24.39	4.10	2.025	2.43	11.90	8.40	2.898	3.48
42.02	2.38	1.543	1.85	23.81	4.20	2.049	2.46	11.76	8.50	2.915	3.50
41.67	2.40	1.549	1.86	23.26	4.30	2.074	2.49	11.63	8.60	2.933	3.52
41.32	2.42	1.556	1.87	22.73	4.40	2.098	2.52	11.49	8.70	2.950	3.54
40.98	2.44	1.562	1.87	22.22	4.50	2.121	2.55	11.36	8.80	2.966	3.56
40.65	2.45	1.568	1.88	21.74	4.60	2.145	2.57	11.24	8.90	2.983	3.58
40.32	2.48	1.575	1.89	21.28	4.70	2.168	2.60	11.11	9.00	3.000	3.60
40.00	2.50	1.581	1.90	20.83	4.80	2.191	2.63	10.99	9.10	3.017	3.62
39.68	2.52	1.587	1.90	20.41	4.90	2.214	2.66	10.87	9.20	3.033	3.64
39.37	2.54	1.594	1.91	20.00	5.00	2.236	2.68	10.75	9.30	3.050	3.66
39.06	2.56	1.600	1.92	19.61	5.10	2.258	2.71	10.64	9.40	3.066	3.68
38.76	2.58	1.606	1.93	19.23	5.20	2.280	2.74	10.53	9.50	3.082	3.70
38.46	2.60	1.612	1.93	18.87	5.30	2.302	2.76	10.42	9.60	3.098	3.72
38.17	2.62	1.619	1.94	18.52	5.40	2.324	2.76	10.31	9.70	3.114	3.74
37.88	2.64	1.625	1.95	18.18	5.50	2.345	2.81	10.20	9.80	3.130	3.76
37.59	2.66	1.631	1.96	17.86	5.60	2.366	2.84	10.10	9.90	3.146	3.78
37.31	2.68	1.637	1.96	17.54	5.70	2.387	2.86	10.00	10.00	3.162	3.79
37.04	2.70	1.643	1.97	17.24	5.80	2.408	2.89	9.09	11.00	3.317	3.98
36.76	2.72	1.649	1.98	16.95	5.90	2.429	2.91	8.33	12.00	3.464	4.16
36.50	2.74	1.655	1.99	16.67	6.00	2.449	2.94	7.69	13.00	3.606	4.33
36.23	2.76	1.661	1.99	16.39	6.10	2.470	2.96	7.14	14.00	3.742	4.49
35.97	2.78	1.667	2.00	16.13	6.20	2.490	2.99	6.67	15.00	3.873	4.65
35.71	2.80	1.673	2.01	15.87	6.30	2.510	3.01	6.25	16.00	4.000	4.80
35.46	2.82	1.679	2.01	15.62	6.40	2.530	3.04	5.88	17.00	4.123	4.95
35.21	2.84	1.685	2.02	15.38	6.50	2.550	3.06	5.56	18.00	4.243	5.09
34.97	2.86	1.691	2.03	15.15	6.60	2.569	3.08	5.26	19.00	4.359	5.23
34.72	2.88	1.697	2.04	14.93	6.70	2.588	3.11	5.00	20.00	4.472	5.37
34.48	2.90	1.703	2.04	14.71	6.80	2.608	3.13				
34.25	2.92	1.709	2.05	14.49	6.90	2.627	3.15				

## Yarn Organizations

Courtesy W. A. Graham Clark

Yarn Number	Lap Ounce Per Yard	CARD		DRAW-FRAME		SLUBBER		INTER-MEDIATE		FINE FRAME		JACK FRAME		SPINNING		
		Draft	Sliver Grains	Sliver Grains	Sliver Hank	Doublings	Draft	Hank	Doublings	Draft	Hank	Doublings	Draft	Hank	Doublings	Draft
6	16	93	75	75	111	1	3.6	.40	2	5.	1.00	-	-	-	1	6.
8	16	-	75	75	111	1	4.5	.50	2	5.	1.25	-	-	-	1	6.
10	14	94	65	65	128	1	3.9	.50	2	5.3	1.33	-	-	-	1	7.5
12	14	-	65	65	128	1	4.7	.60	2	5.3	1.60	-	-	-	1	7.5
-	14	-	65	65	128	1	3.9	.50	2	4.	1.00	2	5.	2.50	2	9.6
14	14	-	65	65	128	1	4.7	.60	2	5.3	1.60	-	-	-	1	8.8
-	14	-	65	65	128	1	3.9	.50	2	4.	1.00	2	5.	2.50	2	11.2
16	14	-	65	65	128	1	4.7	.60	2	6.	1.80	-	-	-	1	8.8
-	14	-	65	65	128	1	3.9	.50	2	4.	1.00	2	6.	3.00	2	10.6
18	14	-	65	65	128	1	3.9	.50	2	4.	1.00	2	5.	2.50	-	7.2
-	14	-	65	65	128	1	3.9	.50	2	4.	1.00	2	6.	3.00	-	12.0
20	13	95	60	65	128	1	3.9	.50	2	4.	1.00	2	5.	2.50	-	8.0
-	13	-	60	65	128	1	3.9	.50	2	5.3	1.33	2	6.	4.00	-	10.0
22	13	-	60	65	128	1	3.9	.50	2	4.	1.00	2	5.	2.50	-	8.8
-	13	-	60	65	128	1	3.9	.50	2	5.3	1.33	2	6.	4.00	-	11.0
24	13	-	60	65	128	1	3.9	.50	2	4.	1.00	2	5.	2.50	-	8.0
-	13	-	60	65	128	1	3.9	.50	2	5.3	1.33	2	6.	4.00	-	12.0
26	13	-	60	65	128	1	3.9	.50	2	4.	1.00	2	6.	3.00	-	8.7
-	13	-	60	65	128	1	4.7	.60	2	5.	1.50	2	6.	4.50	-	11.6
28	12	-	50	60	139	1	3.6	.50	2	5.3	1.33	2	5.3	3.50	-	8.0
-	12	-	50	60	139	1	4.7	.65	2	5.5	1.80	2	6.1	5.50	-	10.2
30	12	-	50	60	139	1	3.6	.50	2	5.3	1.33	2	5.3	3.50	-	8.6
-	12	-	50	60	139	1	4.7	.65	2	5.5	1.80	2	6.1	5.50	-	10.9
32	12	-	50	60	139	1	3.6	.50	2	5.3	1.33	2	6.	4.00	-	8.0
-	12	-	50	60	139	1	4.7	.65	2	5.5	1.80	2	6.1	5.50	-	11.6
34	12	-	50	60	139	1	3.6	.50	2	5.3	1.33	2	6.	4.00	-	8.5
-	12	-	50	60	139	1	4.7	.65	2	5.5	1.80	2	6.1	5.50	-	12.4
36	12	-	50	60	139	1	3.6	.50	2	5.3	1.33	2	6.	4.00	-	9.0
-	12	-	50	60	139	1	3.6	.50	2	4.	1.00	2	5.	2.50	2	5.2 6.5
38	12	-	50	60	139	1	3.6	.50	2	5.3	1.33	2	6.	4.00	-	9.5
-	12	-	50	60	139	1	3.6	.50	2	4.	1.00	2	5.	2.50	2	5.2 6.5
40	12	-	50	60	139	1	3.6	.50	2	4.	1.00	2	5.	2.50	2	6.4 8.0
50	12	117	45	60	139	1	3.6	.50	2	4.	1.00	2	6.	3.00	2	6.7 10.
60	12	-	45	60	139	1	4.3	.60	2	5.	1.50	2	5.3	4.00	2	6.0 12.
70	12	-	45	60	139	1	4.3	.60	2	5.	1.50	2	6.	4.50	2	6.2 14.
80	12	-	45	60	139	1	4.7	.65	2	5.5	1.80	2	5.6	5.00	2	6.4 16.
90	12	-	45	60	139	1	4.7	.65	2	5.5	1.80	2	6.1	5.50	2	6.5 18.
100	12	-	45	60	139	1	4.7	.65	2	5.5	1.80	2	6.4	5.75	2	7.0 20.
110	11	137	35	50	167	1	4.8	.80	2	5.5	2.25	2	6.	6.76	2	6.5 22.
120	11	-	35	50	167	1	4.8	.80	2	5.5	2.25	2	6.	6.75	2	7.1 24.

# **Square Root of the Numbers or Counts, from One to Two Hundred Hanks in the Pound, with the Twist per Inch for Different Kinds of Yarns**

The heavy figures opposite No. 1 show the multipliers for the square root of all numbers throughout the tables.

Counts or Numbers	Square Root	Ordinary Warp Twists	Extra Mule Twist	Mule Twists	Weft Twist	Twist for Doubling	Hosiery Yarn
1	1.00	<b>4.75</b>	<b>4.20</b>	<b>3.75</b>	<b>3.25</b>	<b>2.75</b>	<b>2.50</b>
2	1.41	6.72	5.65	5.30	4.60	3.88	3.53
3	1.73	8.23	6.92	6.49	5.62	4.76	4.33
4	2.00	9.50	8.00	7.50	6.50	5.50	5.00
5	2.23	10.62	8.94	8.37	7.26	6.14	5.59
6	2.44	11.64	9.79	9.18	7.96	6.73	6.12
7	2.64	12.57	10.58	9.92	8.59	7.27	6.61
8	2.82	13.44	11.31	10.50	9.19	7.77	7.07
9	3.00	14.25	12.00	11.25	9.75	8.25	7.50
10	3.16	15.02	12.64	11.85	10.27	8.79	7.90
11	3.31	15.75	13.26	12.43	10.77	9.12	8.29
12	3.46	16.45	13.85	12.99	11.25	9.52	8.66
14	3.74	17.77	14.96	14.03	12.16	10.28	9.35
16	4.00	19.00	16.00	15.00	13.00	11.00	10.00
18	4.24	20.15	16.97	15.90	13.78	11.66	10.60
20	4.47	21.24	17.88	16.77	14.53	12.29	11.18
22	4.69	22.28	18.76	17.58	15.24	12.89	
24	4.89	23.27	19.59	18.37	15.92	13.47	
26	5.09	24.22	20.39	19.11	16.57	14.02	
28	5.29	25.13	21.16	19.84	17.19	14.55	
30	5.47	26.02	21.90	20.53	17.80	15.06	
35	5.91	28.10	23.66	22.18	19.22	16.27	
40	6.32	30.04	25.29	23.71	20.55	17.39	
45	6.70	31.86	26.83	25.15	21.80	18.44	
50	7.07	33.59	28.28	26.51	22.98	19.44	
55	7.41	35.23	29.66	27.81	24.10	20.39	
60	7.74	36.79	30.98	29.04	25.17	21.30	
65	8.06	38.30	32.24	30.23	26.20	22.17	
70	8.36	39.74	33.46	31.37	27.19	23.00	
75	8.66	41.14	34.64	32.47	28.14	23.81	
80	8.94	42.49	35.77	33.54	29.06	24.59	
85	9.21	43.79	36.87	34.57	29.96	25.35	
90	9.48	45.06	37.94	35.47	30.83	26.08	
95	9.74	46.30	38.98	36.55	31.67	26.80	
100	10.00	47.50	40.00	37.50	32.50	27.50	
110	10.48	49.82	41.95	39.33	34.08	28.84	
120	10.95	52.03	43.81	41.07	35.60	30.12	
130	11.40	54.16	45.60	42.75	37.05	31.35	
140	11.83	56.20	47.32	44.37	38.47	32.54	
150	12.24	58.04	48.98	45.92	39.80	33.68	
160	12.64	60.04	50.59	47.43	41.10	34.78	
170	13.03	61.89	52.15	48.89	42.37	35.85	
180	13.41	63.70	53.66	50.31	43.60	36.89	
190	13.78	65.46	55.13	51.69	44.79	37.90	
200	14.14	67.17	56.56	53.03	45.96	38.89	

## Yarn Table

For numbering cotton yarn by the weight in grains of 120 yards or 1 skein

120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn
1.	1,000.	.3	81.30	.6	56.82	.9	43.67	.2	35.46
2.	500.	.4	80.65	.7	56.50	23.	43.48	.3	35.34
3.	333.3	.5	80.00	.8	56.18	.1	43.29	.4	35.21
4.	250.0	.6	79.37	.9	55.87	.2	43.10	.5	35.09
5.	200.0	.7	78.74	18.	55.56	.3	42.92	.6	34.97
5.5	181.8	.8	78.12	.1	55.25	.4	42.74	.7	34.84
6.	166.7	.9	77.52	.2	54.95	.5	42.55	.8	34.72
6.5	153.8	13.	76.92	.3	54.64	.6	42.37	.9	34.60
7.	142.9	.1	76.34	.4	54.35	.7	42.19	29.	34.48
7.5	133.3	.2	75.76	.5	54.05	.8	42.02	.1	34.36
8.	125.0	.3	75.19	.6	53.76	.9	41.84	.2	34.25
.1	123.5	.4	74.63	.7	53.48	24.	41.67	.3	34.13
.2	122.0	.5	74.07	.8	53.19	.1	41.49	.4	34.01
.3	120.5	.6	73.53	.9	52.91	.2	41.32	.5	33.90
.4	119.0	.7	72.99	19.	52.63	.3	41.15	.6	33.78
.5	117.6	.8	72.46	.1	52.36	.4	40.98	.7	33.67
.6	116.3	.9	71.94	.2	52.08	.5	40.82	.8	33.56
.7	114.9	14.	71.43	.3	51.81	.6	40.65	.9	33.44
.8	113.6	.1	70.92	.4	51.55	.7	40.49	30.	33.33
.9	112.4	.2	70.42	.5	51.28	.8	40.32	.1	33.22
9.	111.1	.3	69.93	.6	51.02	.9	40.16	.2	33.11
.1	109.9	.4	69.44	.7	50.76	25.	40.00	.3	33.00
.2	108.7	.5	68.97	.8	50.51	.1	39.84	.4	32.89
.3	107.5	.6	68.49	.9	50.25	.2	39.68	.5	32.79
.4	106.4	.7	68.03	20.	50.00	.3	39.53	.6	32.68
.5	105.3	.8	67.57	.1	49.75	.4	39.37	.7	32.57
.6	104.2	.9	67.11	.2	49.50	.5	39.22	.8	32.47
.7	103.1	15.	66.67	.3	49.26	.6	39.06	.9	32.36
.8	102.0	.1	66.23	.4	49.02	.7	38.91	31.	32.26
.9	101.0	.2	65.79	.5	48.78	.8	38.76	.1	32.16
10.	100.0	.3	65.36	.6	48.54	.9	38.61	.2	32.05
.1	99.01	.4	64.94	.7	48.31	26.	38.46	.3	31.95
.2	98.04	.5	64.52	.8	48.08	.1	38.31	.4	31.85
.3	97.09	.6	64.10	.9	47.85	.2	38.17	.5	31.75
.4	96.15	.7	63.69	21.	47.62	.3	38.02	.6	31.65
.5	95.24	.8	63.29	.1	47.33	.4	37.88	.7	31.55
.6	94.34	.9	62.89	.2	47.17	.5	37.74	.8	31.45
.7	93.46	16.	62.50	.3	46.95	.6	37.59	.9	31.35
.8	92.59	.1	62.11	.4	46.73	.7	37.45	32.	31.25
.9	91.74	.2	61.73	.5	46.51	.8	37.31	.1	31.15
11.	90.91	.3	61.35	.6	46.30	.9	37.17	.2	31.06
.1	90.09	.4	60.98	.7	46.08	27.	37.04	.3	30.96
.2	89.29	.5	60.61	.8	45.87	.1	36.90	.4	30.86
.3	88.50	.6	60.24	.9	45.66	.2	36.77	.5	30.77
.4	87.72	.7	59.88	22.	45.45	.3	36.63	.6	30.67
.5	86.96	.8	59.52	.1	45.25	.4	36.50	.7	30.58
.6	86.21	.9	59.17	.2	45.05	.5	36.36	.8	30.49
.7	85.47	17.	58.82	.3	44.84	.6	36.23	.9	30.40
.8	84.75	.1	58.48	.4	44.64	.7	36.10	33.	30.30
.9	84.03	.2	58.14	.5	44.44	.8	35.97	.1	30.21
12.	83.33	.3	57.80	.6	44.25	.9	35.84	.2	30.12
.1	82.64	.4	57.47	.7	44.05	28.	35.71	.3	30.03
.2	81.97	.5	57.14	.8	43.86	.1	35.59	.4	20.04

## Yarn Table — (Continued)

For numbering cotton yarn by the weight in grains of 120 yards or 1 skein

120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn
.5	29.85	.8	25.77	.1	22.68	.4	20.24	.7	18.28
.6	29.76	.9	25.71	.2	22.62	.5	20.20	.8	18.25
.7	29.67	39. .1	25.64	.3	22.57	.6	20.16	.9	18.21
.8	29.59	.1	25.58	.4	22.52	.7	20.12	55. .	18.18
.9	29.50	.2	25.51	.5	22.47	.8	20.08	.1	18.15
34. .1	29.41	.3	25.45	.6	22.42	.9	20.04	.2	18.12
.2	29.33	.4	25.38	.7	22.37	50. .	20.00	.3	18.08
.3	29.24	.5	25.32	.8	22.32	.1	19.96	.4	18.05
.4	29.15	.6	25.25	.9	22.27	.2	19.92	.5	18.02
.5	29.07	.7	25.19	45. .	22.22	.3	19.88	.6	17.99
.6	28.99	.8	25.13	.1	22.17	.4	19.84	.7	17.95
.7	28.90	.9	25.06	.2	22.12	.5	19.80	.8	17.92
.8	28.82	40. .	25.00	.3	22.08	.6	19.76	.9	17.89
.9	28.74	.1	24.94	.4	22.03	.7	19.72	56. .	17.86
35. .1	28.65	.2	24.88	.5	21.98	.8	19.69	.1	17.83
.2	28.57	.3	24.81	.6	21.93	.9	19.65	.2	17.79
.3	28.49	.4	24.75	.7	21.88	51. .	19.61	.3	17.76
.4	28.41	.5	24.69	.8	21.83	.1	19.57	.4	17.73
.5	28.33	.6	24.63	.9	21.79	.2	19.53	.5	17.70
.6	28.25	.7	24.57	46. .	21.74	.3	19.49	.6	17.67
.7	28.17	.8	24.51	.1	21.69	.4	19.46	.7	17.64
.8	28.09	.9	24.45	.2	21.65	.5	19.42	.8	17.61
.9	28.01	41. .	24.39	.3	21.60	.6	19.38	.9	17.57
36. .1	27.93	.1	24.33	.4	21.55	.7	19.34	57. .	17.54
.2	27.86	.2	24.27	.5	21.51	.8	19.31	.1	17.51
.3	27.78	.3	24.21	.6	21.46	.9	19.27	.2	17.48
.4	27.70	.4	24.15	.7	21.41	52. .	19.23	.3	17.45
.5	27.62	.5	24.10	.8	21.37	.1	19.19	.4	17.42
.6	27.55	.6	24.04	.9	21.32	.2	19.16	.5	17.39
.7	27.47	.7	23.98	47. .	21.28	.3	19.12	.6	17.36
.8	27.40	.8	23.92	.1	21.23	.4	19.08	.7	17.33
.9	27.32	.9	23.87	.2	21.19	.5	19.05	.8	17.30
37. .1	27.25	42. .	23.81	.3	21.14	.6	19.01	.9	17.27
.2	27.17	.1	23.75	.4	21.10	.7	18.98	58. .	17.24
.3	27.10	.2	23.70	.5	21.05	.8	18.94	.1	17.21
.4	27.03	.3	23.64	.6	21.01	.9	18.90	.2	17.18
.5	26.95	.4	23.58	.7	20.96	53. .	18.87	.3	17.15
.6	26.88	.5	23.53	.8	20.92	.1	18.83	.4	17.12
.7	26.81	.6	23.47	.9	20.88	.2	18.80	.5	17.09
.8	26.74	.7	23.42	48. .	20.83	.3	18.76	.6	17.06
.9	26.67	.8	23.36	.1	20.79	.4	18.73	.7	17.04
38. .1	26.60	.9	23.31	.2	20.75	.5	18.69	.8	17.01
.2	26.53	43. .	23.26	.3	20.70	.6	18.66	.9	16.98
.3	26.46	.1	23.20	.4	20.66	.7	18.62	59. .	16.95
.4	26.39	.2	23.15	.5	20.62	.8	18.59	.1	16.92
.5	26.32	.3	23.09	.6	20.57	.9	18.55	.2	16.89
.6	26.25	.4	23.04	.7	20.53	54. .	18.52	.3	16.86
.7	26.18	.5	22.99	.8	20.49	.1	18.48	.4	16.84
.8	26.11	.6	22.94	.9	20.45	.2	18.45	.5	16.81
.9	26.04	.7	22.88	49. .	20.41	.3	18.42	.6	16.78
39. .1	25.97	.8	22.83	.1	20.37	.4	18.38	.7	16.75
.2	25.91	.9	22.78	.2	20.33	.5	18.35	.8	16.72
.3	25.84	44. .	22.73	.3	20.28	.6	18.32	.9	16.69

## Yarn Table — (Continued)

For numbering cotton yarn by the weight in grains of 120 yards or 1 skein

120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn
60.	16.67	.3	15.31	.6	14.16	.9	13.18	.2	12.32
.1	16.64	.4	15.29	.7	14.14	76.	13.16	.3	12.30
.2	16.61	.5	15.27	.8	14.12	.1	13.14	.4	12.29
.3	16.58	.6	15.24	.9	14.10	.2	13.12	.5	12.27
.4	16.56	.7	15.22	71.	14.08	.3	13.11	.6	12.25
.5	16.53	.8	15.20	.1	14.06	.4	13.09	.7	12.24
.6	16.50	.9	15.17	.2	14.04	.5	13.07	.8	12.22
.7	16.47	66.	15.15	.3	14.03	.6	13.05	.9	12.21
.8	16.45	.1	15.13	.4	14.01	.7	13.04	82.	12.20
.9	16.42	.2	15.11	.5	13.99	.8	13.02	.1	12.18
61.	16.39	.3	15.08	.6	13.97	.9	13.00	.2	12.17
.1	16.37	.4	15.06	.7	13.95	77.	12.99	.3	12.15
.2	16.34	.5	15.04	.8	13.93	.1	12.97	.4	12.14
.3	16.31	.6	15.02	.9	13.91	.2	12.95	.5	12.12
.4	16.29	.7	14.99	72.	13.89	.3	12.94	.6	12.11
.5	16.26	.8	14.97	.1	13.87	.4	12.92	.7	12.09
.6	16.23	.9	14.95	.2	13.85	.5	12.90	.8	12.08
.7	16.21	67.	14.93	.3	13.83	.6	12.89	.9	12.06
.8	16.19	.1	14.90	.4	13.81	.7	12.87	83.	12.05
.9	16.16	.2	14.88	.5	13.79	.8	12.85	.1	12.03
62.	16.13	.3	14.86	.6	13.77	.9	12.84	.2	12.02
.1	16.10	.4	14.84	.7	13.76	78.	12.82	.3	12.00
.2	16.08	.5	14.81	.8	13.74	.1	12.80	.4	11.99
.3	16.05	.6	14.79	.9	13.72	.2	12.79	.5	11.98
.4	16.03	.7	14.77	73.	13.70	.3	12.77	.6	11.96
.5	16.00	.8	14.75	.1	13.68	.4	12.76	.7	11.95
.6	15.97	.9	14.73	.2	13.66	.5	12.74	.8	11.93
.7	15.95	68.	14.71	.3	13.64	.6	12.72	.9	11.92
.8	15.92	.1	14.68	.4	13.62	.7	12.71	84.	11.90
.9	15.90	.2	14.66	.5	13.61	.8	12.69	.1	11.89
63.	15.87	.3	14.64	.6	13.59	.9	12.67	.2	11.88
.1	15.85	.4	14.62	.7	13.57	79.	12.66	.3	11.86
.2	15.83	.5	14.60	.8	13.55	.1	12.64	.4	11.85
.3	15.80	.6	14.58	.9	13.53	.2	12.63	.5	11.83
.4	15.77	.7	14.56	74.	13.51	.3	12.61	.6	11.82
.5	15.75	.8	14.53	.1	13.50	.4	12.59	.7	11.81
.6	15.72	.9	14.51	.2	13.48	.5	12.58	.8	11.79
.7	15.70	69.	14.49	.3	13.46	.6	12.56	.9	11.78
.8	15.67	.1	14.47	.4	13.44	.7	12.55	85.	11.76
.9	15.65	.2	14.45	.5	13.42	.8	12.53	.1	11.75
64.	15.62	.3	14.43	.6	13.40	.9	12.52	.2	11.74
.1	15.60	.4	14.41	.7	13.39	80.	12.50	.3	11.72
.2	15.58	.5	14.39	.8	13.37	.1	12.48	.4	11.71
.3	15.55	.6	14.37	.9	13.35	.2	12.47	.5	11.70
.4	15.53	.7	14.35	75.	13.33	.3	12.45	.6	11.68
.5	15.50	.8	14.33	.1	13.32	.4	12.44	.7	11.67
.6	15.48	.9	14.31	.2	13.30	.5	12.42	.8	11.66
.7	15.46	70.	14.29	.3	13.28	.6	12.41	.9	11.64
.8	15.43	.1	14.27	.4	13.26	.7	12.39	86.	11.63
.9	15.41	.2	14.25	.5	13.25	.8	12.38	.1	11.61
65.	15.38	.3	14.22	.6	13.23	.9	12.36	.2	11.60
.1	15.36	.4	14.20	.7	13.21	81.	12.35	.3	11.59
.2	15.34	.5	14.18	.8	13.19	.1	12.33	.4	11.57



## Yarn Table — (Continued)

For numbering cotton yarn by the weight in grains of 120 yards or 1 skein

120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn
.5	11.56	.8	10.89	.1	10.30	.4	9.77	.7	9.29
.6	11.55	.9	10.88	.2	10.29	.5	9.76	.8	9.28
.7	11.53	92.	10.87	.3	10.28	.6	9.75	.9	9.27
.8	11.52	.1	10.86	.4	10.27	.7	9.74	108.	9.26
.9	11.51	.2	10.85	.5	10.26	.8	9.73	.1	9.25
87.	11.49	.3	10.83	.6	10.25	.9	9.72	.2	9.24
.1	11.48	.4	10.82	.7	10.24	103.	9.71	.3	9.23
.2	11.47	.5	10.81	.8	10.22	.1	9.70	.4	9.23
.3	11.45	.6	10.80	.9	10.21	.2	9.69	.5	9.22
.4	11.44	.7	10.79	98.	10.20	.3	9.68	.6	9.21
.5	11.43	.8	10.78	.1	10.19	.4	9.67	.7	9.20
.6	11.42	.9	10.76	.2	10.18	.5	9.66	.8	9.19
.7	11.40	93.	10.75	.3	10.17	.6	9.65	.9	9.18
.8	11.39	.1	10.74	.4	10.16	.7	9.64	109.	9.17
.9	11.38	.2	10.73	.5	10.15	.8	9.63	.2	9.16
88.	11.36	.3	10.72	.6	10.14	.9	9.62	.4	9.14
.1	11.35	.4	10.71	.7	10.13	104.	9.62	.6	9.12
.2	11.34	.5	10.70	.8	10.12	.1	9.61	.8	9.11
.3	11.33	.6	10.68	.9	10.11	.2	9.60	110.	9.09
.4	11.31	.7	10.67	99.	10.10	.3	9.59	.2	9.07
.5	11.30	.8	10.66	.1	10.09	.4	9.58	.4	9.06
.6	11.29	.9	10.65	.2	10.08	.5	9.57	.6	9.04
.7	11.27	94.	10.64	.3	10.07	.6	9.56	.8	9.03
.8	11.26	.1	10.63	.4	10.06	.7	9.55	111.	9.01
.9	11.25	.2	10.62	.5	10.05	.8	9.54	.2	8.99
89.	11.24	.3	10.60	.6	10.04	.9	9.53	.4	8.98
.1	11.22	.4	10.59	.7	10.03	105.	9.52	.6	8.96
.2	11.21	.5	10.58	.8	10.02	.1	9.51	.8	8.94
.3	11.20	.6	10.57	.9	10.01	.2	9.51	112.	8.93
.4	11.19	.7	10.56	100.	10.00	.3	9.50	.2	8.91
.5	11.17	.8	10.55	.1	9.99	.4	9.49	.4	8.90
.6	11.16	.9	10.54	.2	9.98	.5	9.48	.6	8.88
.7	11.15	95.	10.53	.3	9.97	.6	9.47	.8	8.87
.8	11.14	.1	10.52	.4	9.96	.7	9.46	113.	8.85
.9	11.12	.2	10.50	.5	9.95	.8	9.45	.2	8.83
90.	11.11	.3	10.49	.6	9.94	.9	9.44	.4	8.82
.1	11.10	.4	10.48	.7	9.93	106.	9.43	.6	8.80
.2	11.09	.5	10.47	.8	9.92	.1	9.43	.8	8.79
.3	11.07	.6	10.46	.9	9.91	.2	9.42	114.	8.77
.4	11.06	.7	10.45	101.	9.90	.3	9.41	.2	8.76
.5	11.05	.8	10.44	.1	9.89	.4	9.40	.4	8.74
.6	11.04	.9	10.43	.2	9.88	.5	9.39	.6	8.73
.7	11.03	96.	10.42	.3	9.87	.6	9.38	.8	8.71
.8	11.01	.1	10.41	.4	9.86	.7	9.37	115.	8.70
.9	11.00	.2	10.40	.5	9.85	.8	9.36	.2	8.68
91.	10.99	.3	10.38	.6	9.84	.9	9.35	.4	8.67
.1	10.98	.4	10.37	.7	9.83	107.	9.35	.6	8.65
.2	10.96	.5	10.36	.8	9.82	.1	9.34	.8	8.64
.3	10.95	.6	10.35	.9	9.81	.2	9.33	116.	8.62
.4	10.94	.7	10.34	102.	9.80	.3	9.32	.2	8.61
.5	10.93	.8	10.33	.1	9.79	.4	9.31	.4	8.59
.6	10.92	.9	10.32	.2	9.78	.5	9.30	.6	8.58
.7	10.91	97.	10.31	.3	9.78	.6	9.29	.8	8.56

**Yarn Table — (Continued)**

For numbering cotton yarn by the weight in grains of 120 yards or 1 skein

120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn
117.	8.55	.5	7.33	163.	6.13	209.	4.78	274.	3.65
.2	8.53	137.	7.30	.5	6.12	210.	4.76	276.	3.62
.4	8.52	.5	7.27	164.	6.10	211.	4.74	278.	3.60
.6	8.50	138.	7.25	.5	6.08	212.	4.72	280.	3.57
.8	8.49	.5	7.22	165.	6.06	213.	4.69	282.	3.55
118.	8.47	139.	7.19	.5	6.04	214.	4.67	284.	3.52
.2	8.46	.5	7.17	166.	6.02	215.	4.65	286.	3.50
.4	8.45	140.	7.14	.5	6.01	216.	4.63	288.	3.47
.6	8.43	.5	7.12	167.	5.99	217.	4.61	290.	3.45
.8	8.42	141.	7.09	.5	5.97	218.	4.59	292.	3.42
119.	8.40	.5	7.07	168.	5.95	219.	4.57	294.	3.40
.2	8.39	142.	7.04	.5	5.93	220.	4.55	296.	3.33
.4	8.38	.5	7.02	169.	5.92	221.	4.52	298.	3.36
.6	8.36	143.	6.99	.5	5.90	222.	4.50	300.	3.33
.8	8.35	.5	6.97	170.	5.88	223.	4.48	302.	3.31
120.	8.33	144.	6.94	171.	5.85	224.	4.46	304.	3.29
.2	8.32	.5	6.92	172.	5.81	225.	4.44	306.	3.27
.4	8.31	145.	6.90	173.	5.78	226.	4.42	308.	3.25
.6	8.29	.5	6.87	174.	5.75	227.	4.41	310.	3.23
.8	8.28	146.	6.85	175.	5.71	228.	4.39	312.	3.21
121.	8.26	.5	6.83	176.	5.68	229.	4.37	314.	3.18
.4	8.24	147.	6.80	177.	5.65	230.	4.35	316.	3.17
.6	8.22	.5	6.78	178.	5.62	231.	4.33	318.	3.14
.8	8.21	148.	6.76	179.	5.59	232.	4.31	320.	3.12
122.	8.20	.5	6.73	180.	5.56	233.	4.29	322.	3.11
.5	8.16	149.	6.71	181.	5.52	234.	4.27	324.	3.09
123.	8.13	.5	6.69	182.	5.49	235.	4.26	326.	3.07
.5	8.10	150.	6.67	183.	5.46	236.	4.24	328.	3.05
124.	8.06	.5	6.64	184.	5.43	237.	4.22	330.	3.03
.5	8.03	151.	6.62	185.	5.41	238.	4.20	332.	3.01
125.	8.00	.5	6.60	186.	5.38	239.	4.18	334.	2.99
.5	7.97	152.	6.58	187.	5.35	240.	4.17	336.	2.98
126.	7.94	.5	6.56	188.	5.32	241.	4.15	338.	2.96
.5	7.91	153.	6.54	189.	5.29	242.	4.13	340.	2.94
127.	7.87	.5	6.51	190.	5.26	243.	4.12	342.	2.92
.5	7.84	154.	6.49	191.	5.24	244.	4.10	344.	2.91
128.	7.81	.5	6.47	192.	5.21	245.	4.08	346.	2.89
.5	7.78	155.	6.45	193.	5.18	246.	4.07	348.	2.87
129.	7.75	.5	6.43	194.	5.15	247.	4.05	350.	2.86
.5	7.72	156.	6.41	195.	5.13	248.	4.03	352.	2.84
130.	7.69	.5	6.39	196.	5.10	249.	4.02	354.	2.82
.5	7.66	157.	6.36	197.	5.08	250.	4.00	356.	2.81
131.	7.63	.5	6.35	198.	5.05	252.	3.97	358.	2.79
.5	7.60	158.	6.33	199.	5.03	254.	3.94	360.	2.78
132.	7.58	.5	6.31	200.	5.00	256.	3.91	362.	2.76
.5	7.55	159.	6.29	201.	4.98	258.	3.88	364.	2.75
133.	7.52	.5	6.27	202.	4.95	260.	3.85	366.	2.73
.5	7.49	160.	6.25	203.	4.93	262.	3.82	368.	2.72
134.	7.46	.5	6.23	204.	4.90	264.	3.79	370.	2.70
.5	7.43	161.	6.21	205.	4.88	266.	3.76	372.	2.69
135.	7.41	.5	6.19	206.	4.85	268.	3.73	374.	2.67
.5	7.38	162.	6.17	207.	4.83	270.	3.70	376.	2.66
136.	7.35	.5	6.15	208.	4.81	272.	3.68	378.	2.65

**Yarn Table — (Concluded)**

For numbering cotton yarn by the weight in grains of 120 yards or 1 skein

120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn	120 Yards Weight (Grains)	Number of Yarn
380.	2.63	450.	2.22	525.	1.90	600.	1.67	750.	1.33
382.	2.62	455.	2.20	530.	1.89	610.	1.64	760.	1.32
385.	2.60	460.	2.17	535.	1.87	620.	1.61	770.	1.30
390.	2.56	465.	2.15	540.	1.85	630.	1.59	780.	1.28
395.	2.53	470.	2.13	545.	1.83	640.	1.56	790.	1.27
400.	2.50	475.	2.11	550.	1.82	650.	1.54	800.	1.25
405.	2.47	480.	2.08	555.	1.80	660.	1.52	820.	1.22
410.	2.44	485.	2.06	560.	1.79	670.	1.49	840.	1.19
415.	2.41	490.	2.04	565.	1.77	680.	1.47	860.	1.16
420.	2.38	495.	2.02	570.	1.75	690.	1.45	880.	1.14
425.	2.35	500.	2.00	575.	1.74	700.	1.43	900.	1.11
430.	2.33	505.	1.98	580.	1.72	710.	1.41	925.	1.08
435.	2.30	510.	1.96	585.	1.71	720.	1.39	950.	1.05
440.	2.27	515.	1.94	590.	1.69	730.	1.37	975.	1.03
445.	2.25	520.	1.92	595.	1.68	740.	1.35	1,000.	1.00

**Yarn Number**

To find the yarn number or count:

$$\frac{\text{Number of yards in Sample x Grains in a Pound}}{\text{Weight of sample in grains x standard}} = \text{Yarn Number}$$

Or for cotton yarn using a 120 yard skein:

$$\frac{120 \times 7,000}{\text{Weight of sample x 840} \times \frac{1,000}{\text{Weight of sample in grains}}} = \text{Yarn Number}$$

### Warper Production Calculation

To find pounds of production multiply the yards warped per minute by the multiplier opposite the number of yarn warped, and the product by the hours of operation times the number of ends. Example: To find the product of a warper running 52 yards per minute, on No. 18 yarn, with 410 ends on beam, for 40 hours (actual running time),  $52 \times .00397 \times 410 \times 40 = 3385.6$ .

Number of Yarn	Multipliers	Number of Yarn	Multipliers	Number of Yarn	Multipliers
6	.01190	27	.00265	48	.00149
7	.01020	28	.00255	49	.00146
8	.00893	29	.00246	50	.00143
9	.00794	30	.00238	52	.00137
10	.00714	31	.00230	54	.00132
11	.00649	32	.00223	56	.00127
12	.00595	33	.00213	58	.00123
13	.00549	34	.00210	60	.00119
14	.00510	35	.00204	62	.00115
15	.00476	36	.00198	64	.00112
16	.00446	37	.00193	66	.00108
17	.00420	38	.00188	68	.00105
18	.00397	39	.00183	70	.00102
19	.00376	40	.00179	75	.00095
20	.00357	41	.00174	80	.00089
21	.00340	42	.00170	85	.00084
22	.00325	43	.00166	90	.00079
23	.00311	44	.00162	95	.00075
24	.00298	45	.00159	100	.00071
25	.00286	46	.00155		
26	.00275	47	.00152		

# Table for Use in Converting Linear Yards into Square Yards

Bureau of Census

The following table is made out in parallel columns. The first column refers to the width, in inches, of the woven products while the opposite figure represents the "equivalent" in square yards.

To convert linear yards to square yards, take the "equivalent" opposite the number representing the width in inches and multiply by the number of linear yards. Example: To convert 1,386,520 linear yards of cloth 38½ inches wide into square yards — the "equivalent" of 38½ inches is 1.069, which multiplied by 1,386,520 gives 1,482,190 square yards.

Width in Inches	Equiv- alent Square Yards	Width in Inches	Equiv- alent Square Yards	Width in Inches	Equiv- alent Square Yards	Width in Inches	Equiv- alent Square Yards	Width in Inches	Equiv- alent Square Yards	Width in Inches	Equiv- alent Square Yards
12½	.347	28½	.792	44½	1.236	60½	1.681	76½	2.125	92½	2.569
13	.361	29	.806	45	1.250	61	1.694	77	2.139	93	2.583
13½	.375	29½	.819	45½	1.264	61½	1.708	77½	2.163	93½	2.597
14	.389	30	.833	46	1.278	62	1.722	78	2.167	94	2.611
14½	.403	30½	.847	46½	1.292	62½	1.736	78½	2.181	94½	2.625
15	.417	31	.861	47	1.306	63	1.750	79	2.194	95	2.639
15½	.431	31½	.875	47½	1.319	63½	1.764	79½	2.208	95½	2.653
16	.444	32	.889	48	1.333	64	1.778	80	2.222	96	2.667
16½	.458	32½	.903	48½	1.347	64½	1.792	80½	2.236	96½	2.681
17	.472	33	.917	49	1.361	65	1.806	81	2.250	97	2.694
17½	.486	33½	.931	49½	1.375	65½	1.819	81½	2.264	97½	2.708
18	.500	34	.944	50	1.389	66	1.833	82	2.278	98	2.722
18½	.514	34½	.958	50½	1.403	66½	1.847	82½	2.292	98½	2.736
19	.528	35	.972	51	1.417	67	1.861	83	2.306	99	2.750
19½	.542	35½	.986	51½	1.431	67½	1.875	83½	2.319	99½	2.764
20	.556	36	1.000	52	1.444	68	1.889	84	2.333	100	2.778
20½	.569	36½	1.014	52½	1.458	68½	1.903	84½	2.347	100½	2.792
21	.583	37	1.028	53	1.472	69	1.917	85	2.361	101	2.806
21½	.597	37½	1.042	53½	1.486	69½	1.931	85½	2.375	101½	2.819
22	.611	38	1.056	54	1.500	70	1.944	86	2.389	102	2.833
22½	.625	38½	1.069	54½	1.514	70½	1.958	86½	2.403	102½	2.847
23	.639	39	1.083	55	1.528	71	1.972	87	2.417	103	2.861
23½	.653	39½	1.097	55½	1.542	71½	1.986	87½	2.431	103½	2.875
24	.667	40	1.111	56	1.556	72	2.000	88	2.444	104	2.889
24½	.681	40½	1.125	56½	1.569	72½	2.014	88½	2.458	104½	2.903
25	.694	41	1.139	57	1.583	73	2.028	89	2.472	105	2.917
25½	.708	41½	1.153	57½	1.597	73½	2.042	89½	2.486	105½	2.931
26	.722	42	1.167	58	1.611	74	2.056	90	2.500	106	2.944
26½	.736	42½	1.181	58½	1.625	74½	2.069	90½	2.514	106½	2.958
27	.750	43	1.194	59	1.639	75	2.083	91	2.528	107	2.972
27½	.764	43½	1.208	59½	1.653	75½	2.097	91½	2.542	107½	2.986
28	.778	44	1.222	60	1.667	76	2.111	92	2.556	108	3.000

## Yards of Cloth per Loom per Hour

No allowance for stops

PICKS PER INCH	PICKS PER MINUTE										
	100	105	110	115	120	125	130	135	140	145	150
20	8.33	8.75	9.17	9.58	10.00	10.42	10.83	11.25	11.67	12.08	12.50
22	7.58	7.95	8.33	8.71	9.09	9.47	9.85	10.23	10.61	10.98	11.36
24	6.94	7.29	7.64	7.99	8.33	8.68	9.03	9.37	9.72	10.07	10.42
26	6.41	6.73	7.05	7.37	7.69	8.01	8.33	8.65	8.97	9.29	9.62
28	5.95	6.25	6.55	6.85	7.14	7.44	7.74	8.04	8.33	8.63	8.93
30	5.56	5.83	6.11	6.39	6.67	6.94	7.22	7.50	7.78	8.06	8.33
32	5.21	5.47	5.73	5.99	6.25	6.51	6.77	7.03	7.29	7.55	7.81
34	4.90	5.15	5.39	5.64	5.88	6.13	6.37	6.62	6.86	7.11	7.35
36	4.63	4.86	5.09	5.32	5.56	5.79	6.02	6.25	6.48	6.71	6.94
38	4.39	4.61	4.82	5.04	5.26	5.48	5.70	5.92	6.14	6.36	6.58
40	4.17	4.37	4.58	4.79	5.00	5.21	5.42	5.63	5.83	6.04	6.25
42	3.97	4.17	4.37	4.56	4.76	4.96	5.16	5.36	5.56	5.75	5.95
44	3.79	3.98	4.17	4.36	4.55	4.73	4.92	5.11	5.30	5.49	5.68
46	3.62	3.80	3.99	4.17	4.35	4.53	4.71	4.89	5.07	5.25	5.43
48	3.47	3.65	3.82	3.99	4.17	4.34	4.51	4.69	4.86	5.03	5.21
50	3.33	3.50	3.67	3.83	4.00	4.17	4.33	4.50	4.67	4.83	5.00
52	3.21	3.37	3.53	3.69	3.85	4.01	4.17	4.33	4.49	4.65	4.81
54	3.09	3.24	3.40	3.55	3.70	3.86	4.01	4.17	4.32	4.48	4.63
56	2.98	3.13	3.27	3.42	3.57	3.72	3.87	4.02	4.17	4.32	4.46
58	2.87	3.02	3.16	3.30	3.45	3.59	3.74	3.88	4.02	4.17	4.31
60	2.78	2.92	3.06	3.19	3.33	3.47	3.61	3.75	3.89	4.03	4.17
62	2.69	2.82	2.96	3.09	3.23	3.36	3.49	3.63	3.76	3.90	4.03
64	2.60	2.73	2.86	2.99	3.13	3.26	3.39	3.52	3.65	3.78	3.91
66	2.53	2.65	2.78	2.90	3.03	3.16	3.28	3.41	3.54	3.66	3.79
68	2.45	2.57	2.70	2.82	2.94	3.06	3.19	3.31	3.43	3.55	3.68
70	2.38	2.50	2.62	2.74	2.86	2.98	3.10	3.21	3.33	3.45	3.57
72	2.31	2.43	2.55	2.66	2.78	2.89	3.01	3.13	3.24	3.36	3.47
74	2.25	2.36	2.48	2.59	2.70	2.82	2.93	3.04	3.15	3.27	3.38
76	2.19	2.30	2.41	2.52	2.63	2.74	2.85	2.96	3.07	3.18	3.29
78	2.14	2.24	2.35	2.46	2.56	2.67	2.78	2.88	2.99	3.10	3.21
80	2.08	2.19	2.29	2.40	2.50	2.60	2.71	2.81	2.92	3.02	3.13
82	2.03	2.13	2.24	2.34	2.44	2.54	2.64	2.74	2.85	2.95	3.05
84	1.98	2.08	2.18	2.28	2.38	2.48	2.58	2.68	2.78	2.88	2.98
86	1.94	2.03	2.13	2.23	2.33	2.42	2.52	2.62	2.71	2.81	2.91
88	1.89	1.99	2.08	2.18	2.27	2.37	2.46	2.56	2.65	2.75	2.84
90	1.85	1.94	2.04	2.13	2.22	2.31	2.41	2.50	2.59	2.69	2.78
92	1.81	1.90	1.99	2.08	2.17	2.26	2.36	2.45	2.54	2.63	2.72
94	1.77	1.86	1.95	2.04	2.13	2.22	2.30	2.39	2.48	2.57	2.66
96	1.74	1.82	1.91	2.00	2.08	2.17	2.26	2.34	2.43	2.52	2.60
98	1.70	1.79	1.87	1.96	2.04	2.13	2.21	2.30	2.38	2.47	2.55
100	1.67	1.75	1.83	1.92	2.00	2.08	2.17	2.25	2.33	2.42	2.50

## Yards of Cloth per Loom per Hour — (Continued)

No allowance for stops

Picks per Inch	Picks per Minute										
	155	160	165	170	175	180	185	190	195	200	205
20	12.92	13.33	13.75	14.17	14.58	15.00	15.42	15.83	16.25	16.67	17.08
22	11.74	12.12	12.50	12.88	13.26	13.64	14.02	14.39	14.77	15.15	15.53
24	10.76	11.11	11.46	11.81	12.15	12.50	12.85	13.19	13.54	13.89	14.24
26	9.94	10.26	10.58	10.90	11.22	11.54	11.86	12.18	12.50	12.82	13.14
28	9.23	9.52	9.82	10.12	10.42	10.71	11.01	11.31	11.61	11.90	12.20
30	8.61	8.89	9.17	9.44	9.72	10.00	10.28	10.55	10.83	11.11	11.39
32	8.07	8.33	8.59	8.85	9.11	9.37	9.64	9.90	10.16	10.42	10.68
34	7.60	7.84	8.09	8.33	8.58	8.82	9.07	9.31	9.56	9.80	10.05
36	7.18	7.41	7.64	7.87	8.10	8.33	8.56	8.80	9.03	9.26	9.49
38	6.80	7.02	7.24	7.46	7.68	7.89	8.11	8.33	8.55	8.77	8.99
40	6.46	6.67	6.87	7.08	7.29	7.50	7.71	7.92	8.13	8.33	8.54
42	6.15	6.35	6.55	6.75	6.94	7.14	7.34	7.54	7.74	7.94	8.13
44	5.87	6.06	6.25	6.44	6.63	6.82	7.01	7.20	7.39	7.58	7.77
46	5.62	5.80	5.98	6.16	6.34	6.52	6.70	6.88	7.07	7.25	7.43
48	5.38	5.56	5.73	5.90	6.08	6.25	6.42	6.60	6.77	6.94	7.12
50	5.17	5.33	5.50	5.67	5.83	6.00	6.17	6.33	6.50	6.67	6.83
52	4.97	5.13	5.29	5.45	5.61	5.77	5.93	6.09	6.25	6.41	6.57
54	4.78	4.94	5.09	5.25	5.40	5.56	5.71	5.86	6.02	6.17	6.33
56	4.61	4.76	4.91	5.06	5.21	5.36	5.51	5.65	5.80	5.95	6.10
58	4.45	4.60	4.74	4.88	5.03	5.17	5.32	5.46	5.60	5.75	5.89
60	4.31	4.44	4.58	4.72	4.86	5.00	5.14	5.28	5.42	5.56	5.69
62	4.17	4.30	4.44	4.57	4.70	4.84	4.97	5.11	5.24	5.38	5.51
64	4.04	4.17	4.30	4.43	4.56	4.69	4.82	4.95	5.08	5.21	5.34
66	3.91	4.04	4.17	4.29	4.42	4.55	4.67	4.80	4.92	5.05	5.18
68	3.80	3.92	4.04	4.17	4.29	4.41	4.53	4.66	4.78	4.90	5.02
70	3.69	3.81	3.93	4.05	4.17	4.29	4.40	4.52	4.64	4.76	4.88
72	3.59	3.70	3.82	3.94	4.05	4.17	4.28	4.40	4.51	4.63	4.75
74	3.49	3.60	3.72	3.83	3.94	4.05	4.17	4.28	4.39	4.50	4.62
76	3.40	3.51	3.62	3.73	3.84	3.95	4.06	4.17	4.28	4.39	4.50
78	3.31	3.42	3.53	3.63	3.74	3.85	3.95	4.06	4.17	4.27	4.38
80	3.23	3.33	3.44	3.54	3.65	3.75	3.85	3.96	4.06	4.17	4.27
82	3.15	3.25	3.35	3.46	3.56	3.66	3.76	3.86	3.96	4.07	4.17
84	3.08	3.17	3.27	3.37	3.47	3.57	3.66	3.77	3.87	3.97	4.07
86	3.00	3.10	3.20	3.29	3.39	3.49	3.58	3.68	3.78	3.88	3.97
88	2.94	3.03	3.13	3.22	3.31	3.41	3.50	3.60	3.69	3.79	3.88
90	2.87	2.96	3.06	3.15	3.24	3.33	3.43	3.52	3.61	3.70	3.80
92	2.81	2.90	2.99	3.08	3.17	3.26	3.35	3.44	3.53	3.62	3.71
94	2.75	2.84	2.93	3.01	3.10	3.19	3.28	3.37	3.46	3.55	3.63
96	2.69	2.78	2.86	2.95	3.04	3.13	3.21	3.30	3.39	3.47	3.56
98	2.64	2.72	2.81	2.89	2.98	3.06	3.15	3.23	3.32	3.40	3.49
100	2.58	2.67	2.75	2.83	2.92	3.00	3.08	3.17	3.25	3.33	3.44

## Yards of Cloth per Loom per Hour — (Continued)

No allowance for stops

PICKS PER INCH	PICKS PER MINUTE										
	100	105	110	115	120	125	130	135	140	145	150
102	1.63	1.72	1.80	1.88	1.96	2.04	2.12	2.21	2.29	2.37	2.45
104	1.60	1.68	1.76	1.84	1.92	2.00	2.08	2.16	2.24	2.32	2.40
106	1.57	1.65	1.73	1.81	1.89	1.97	2.04	2.12	2.20	2.28	2.36
108	1.54	1.62	1.70	1.77	1.85	1.93	2.01	2.08	2.16	2.24	2.31
110	1.52	1.59	1.67	1.74	1.82	1.89	1.97	2.05	2.12	2.20	2.27
112	1.49	1.56	1.64	1.71	1.79	1.86	1.93	2.01	2.08	2.16	2.23
114	1.46	1.54	1.61	1.68	1.75	1.83	1.90	1.97	2.05	2.12	2.19
116	1.44	1.51	1.58	1.65	1.72	1.80	1.87	1.94	2.01	2.08	2.16
118	1.41	1.48	1.55	1.62	1.69	1.77	1.84	1.91	1.98	2.05	2.12
120	1.39	1.46	1.53	1.60	1.67	1.74	1.81	1.87	1.94	2.01	2.08
122	1.37	1.43	1.50	1.57	1.64	1.71	1.78	1.84	1.91	1.98	2.04
124	1.34	1.41	1.48	1.55	1.61	1.68	1.75	1.81	1.88	1.95	2.01
126	1.32	1.39	1.46	1.52	1.59	1.65	1.72	1.79	1.85	1.92	1.98
128	1.30	1.37	1.43	1.50	1.56	1.63	1.69	1.76	1.82	1.89	1.95
130	1.28	1.35	1.41	1.47	1.54	1.60	1.67	1.73	1.79	1.86	1.92
134	1.24	1.31	1.37	1.43	1.49	1.55	1.62	1.68	1.74	1.80	1.87
136	1.23	1.29	1.35	1.41	1.47	1.53	1.59	1.65	1.72	1.78	1.84
140	1.19	1.25	1.31	1.37	1.43	1.49	1.55	1.61	1.67	1.73	1.79
144	1.16	1.22	1.27	1.33	1.39	1.45	1.50	1.56	1.62	1.68	1.74
146	1.14	1.20	1.26	1.31	1.37	1.43	1.48	1.54	1.60	1.66	1.71
150	1.11	1.17	1.22	1.28	1.33	1.39	1.44	1.50	1.56	1.61	1.67
154	1.08	1.14	1.19	1.24	1.30	1.35	1.41	1.46	1.52	1.57	1.62
156	1.07	1.12	1.18	1.23	1.28	1.34	1.39	1.44	1.50	1.55	1.60
160	1.04	1.09	1.15	1.20	1.25	1.30	1.35	1.41	1.46	1.51	1.56
164	1.02	1.07	1.12	1.17	1.22	1.27	1.32	1.37	1.42	1.47	1.52
166	1.00	1.05	1.10	1.15	1.20	1.26	1.31	1.35	1.41	1.46	1.51
170	.98	1.03	1.08	1.13	1.18	1.23	1.27	1.32	1.37	1.42	1.47
174	.96	1.01	1.05	1.10	1.15	1.20	1.25	1.29	1.34	1.39	1.44
176	.95	.99	1.04	1.09	1.14	1.18	1.23	1.28	1.33	1.37	1.42
180	.93	.97	1.02	1.06	1.11	1.16	1.20	1.25	1.30	1.34	1.39

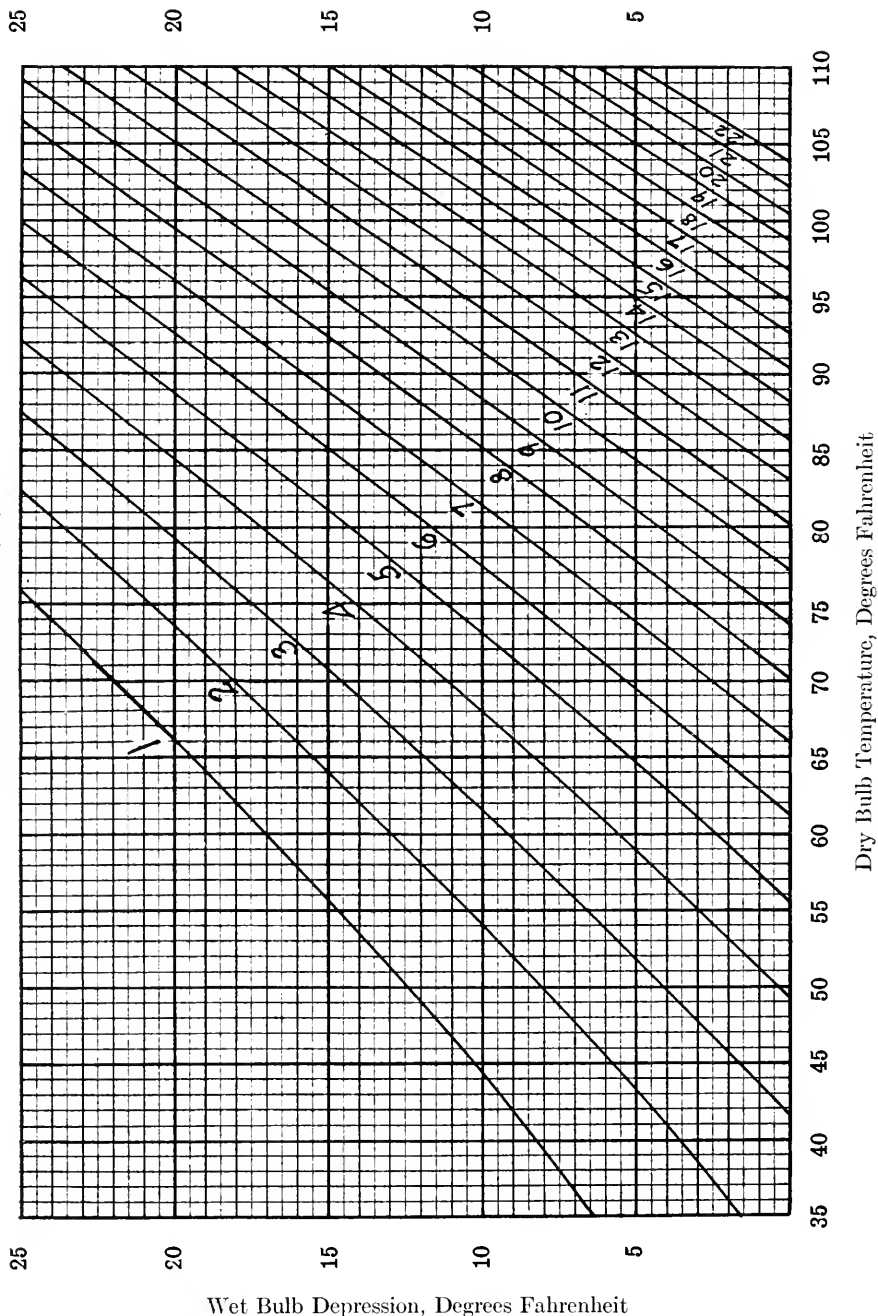


## Yards of Cloth per Loom per Hour — (Concluded)

No allowance for stops

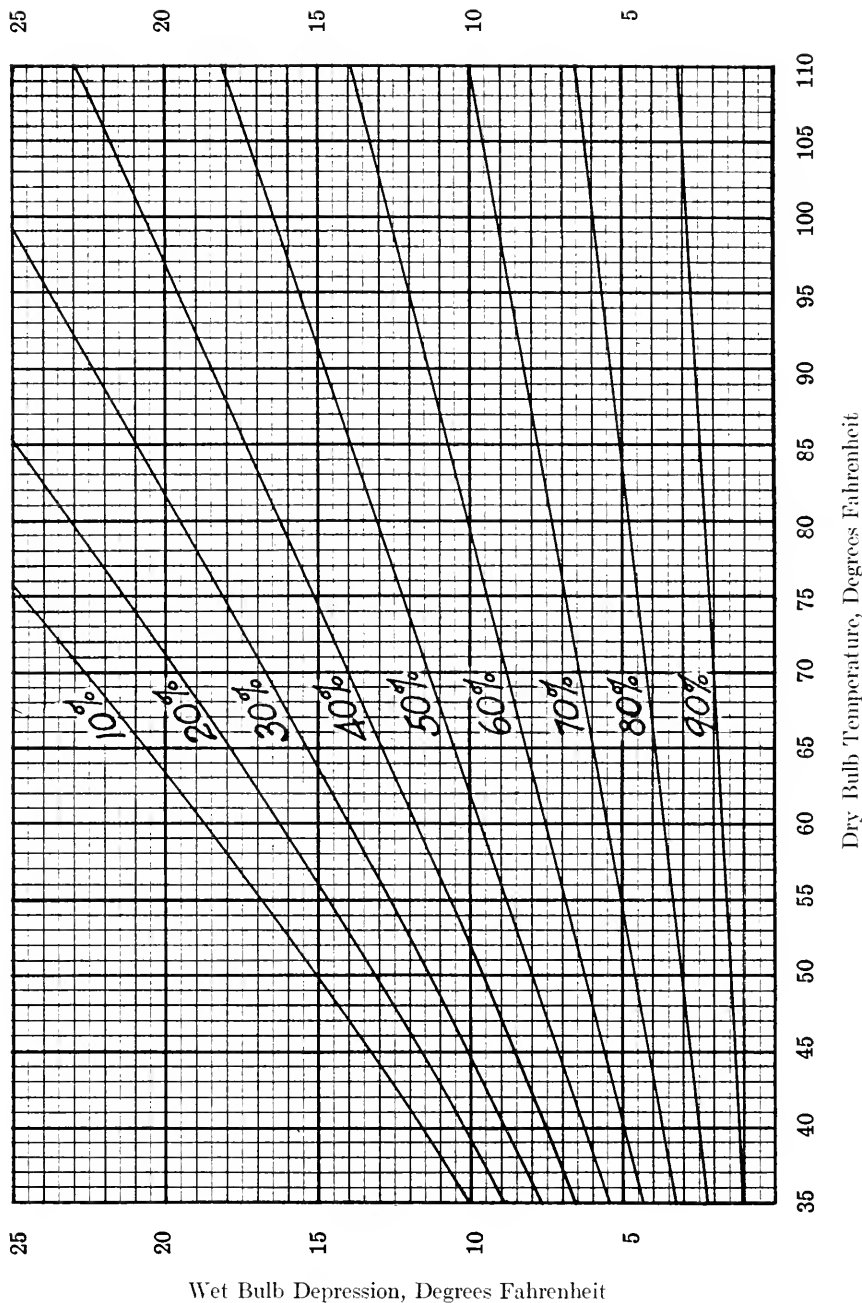
PICKS PER INCH	PICKS PER MINUTE										
	155	160	165	170	175	180	185	190	195	200	205
102	2.53	2.61	2.70	2.78	2.86	2.94	3.02	3.10	3.19	3.27	3.35
104	2.48	2.56	2.64	2.72	2.80	2.88	2.96	3.04	3.13	3.21	3.29
106	2.44	2.52	2.59	2.67	2.75	2.83	2.91	2.99	3.07	3.14	3.22
108	2.39	2.47	2.55	2.62	2.70	2.78	2.85	2.93	3.01	3.09	3.16
110	2.35	2.42	2.50	2.58	2.65	2.73	2.80	2.88	2.95	3.03	3.11
112	2.31	2.38	2.46	2.53	2.60	2.68	2.75	2.83	2.90	2.98	3.05
114	2.27	2.34	2.41	2.49	2.56	2.63	2.70	2.78	2.85	2.92	3.00
116	2.23	2.30	2.37	2.44	2.51	2.59	2.66	2.73	2.80	2.87	2.95
118	2.19	2.26	2.33	2.40	2.47	2.54	2.61	2.68	2.75	2.82	2.90
120	2.15	2.22	2.29	2.36	2.43	2.50	2.57	2.64	2.71	2.78	2.85
122	2.12	2.19	2.25	2.32	2.39	2.46	2.53	2.60	2.66	2.73	2.80
124	2.08	2.15	2.22	2.28	2.35	2.42	2.49	2.55	2.62	2.69	2.76
126	2.05	2.12	2.18	2.25	2.31	2.38	2.45	2.51	2.58	2.65	2.71
128	2.02	2.08	2.15	2.21	2.28	2.34	2.41	2.47	2.54	2.60	2.67
130	1.99	2.05	2.12	2.18	2.24	2.31	2.37	2.44	2.50	2.56	2.63
134	1.93	1.99	2.05	2.11	2.18	2.24	2.30	2.36	2.43	2.49	2.55
136	1.90	1.96	2.02	2.08	2.14	2.21	2.27	2.33	2.39	2.45	2.51
140	1.85	1.90	1.96	2.02	2.08	2.14	2.20	2.26	2.32	2.38	2.44
144	1.79	1.85	1.91	1.97	2.03	2.08	2.14	2.20	2.26	2.31	2.37
146	1.77	1.83	1.88	1.94	2.00	2.05	2.11	2.17	2.23	2.28	2.34
150	1.72	1.78	1.83	1.89	1.94	2.00	2.06	2.11	2.17	2.22	2.28
154	1.68	1.73	1.79	1.84	1.89	1.95	2.00	2.06	2.11	2.16	2.22
156	1.66	1.71	1.76	1.82	1.87	1.92	1.98	2.03	2.08	2.14	2.19
160	1.61	1.67	1.72	1.77	1.82	1.87	1.93	1.98	2.03	2.08	2.14
164	1.58	1.63	1.68	1.73	1.78	1.83	1.88	1.93	1.98	2.03	2.08
166	1.56	1.61	1.66	1.71	1.76	1.81	1.86	1.91	1.96	2.01	2.06
170	1.52	1.57	1.62	1.67	1.72	1.76	1.81	1.86	1.91	1.96	2.01
174	1.48	1.54	1.58	1.63	1.68	1.72	1.77	1.82	1.87	1.92	1.96
176	1.47	1.52	1.56	1.61	1.66	1.70	1.75	1.80	1.85	1.89	1.94
180	1.44	1.48	1.53	1.57	1.62	1.67	1.71	1.76	1.81	1.85	1.90

**Absolute Humidity**  
Grains of moisture per cubic foot  
Courtesy Parks-Cramer Company



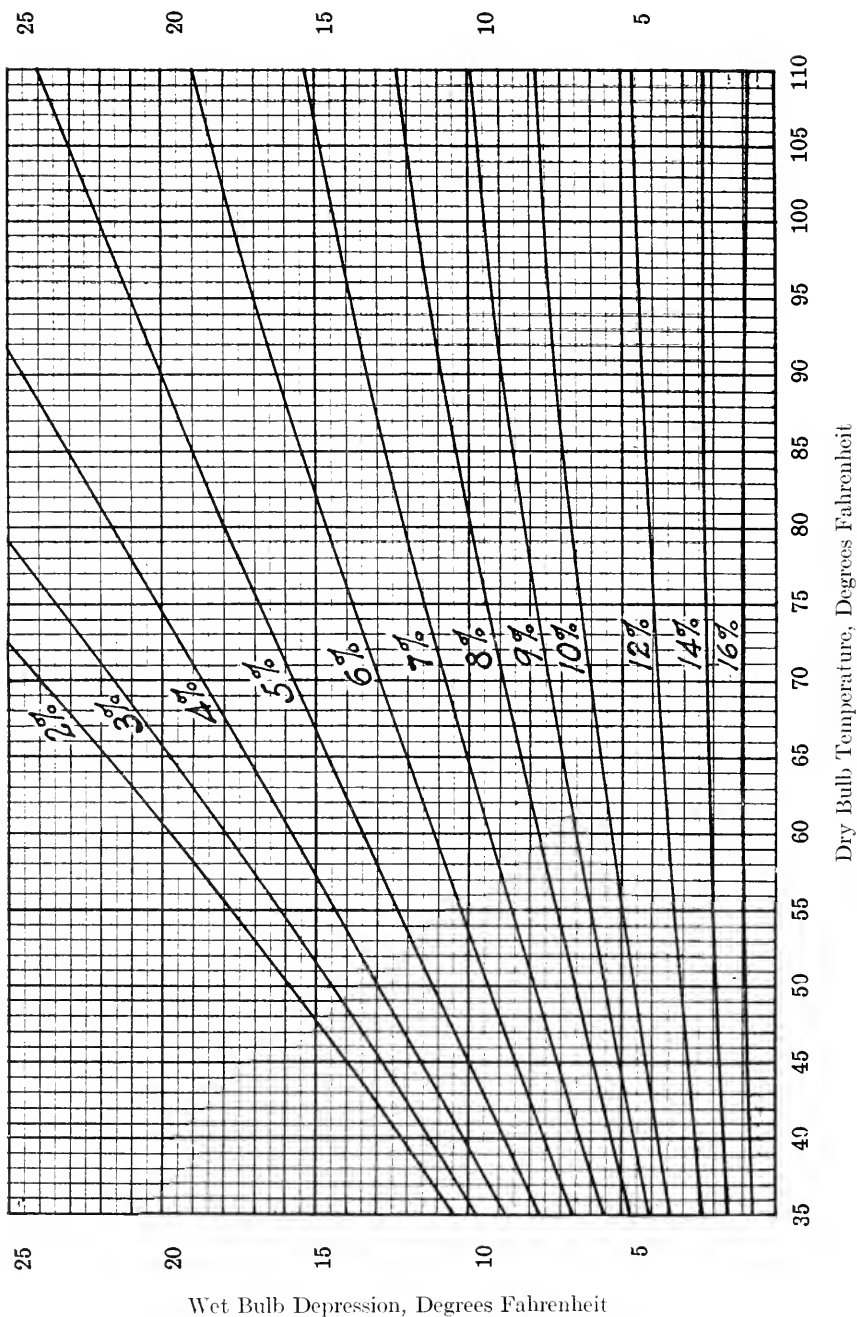
# Relative Humidity

Courtesy Parks-Cramer Company



**Cotton Regain**

Theoretical Regain for Raw Cotton  
Courtesy Parks-Cramer Company



# Psychrometric Humidity Table for Use with Sling Psychrometer only

Courtesy Parks-Cramer Company

TEMP OF DRY BULB	Relative Humidities—Large Figures														Actual Humidities—Small Figures											
	WET BULB DEPRESSION																									
	F°	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°	21°	22°	23°	24°
60	100 57	94 54	89 51	83 48	78 45	73 42	68 39	53 36	48 33	43 30	39 27	34 24	30 21	26 17	21 13	17 10	13 7	9 5	5 1	1 0						
61	100 58	94 55	89 52	84 49	78 46	73 43	68 40	53 37	48 34	44 31	40 28	35 25	31 22	27 18	22 14	18 11	14 8	10 6	7 3	3 0						
62	100 59	94 56	89 53	84 50	79 47	74 44	69 41	54 38	49 35	45 32	41 29	36 26	32 23	28 19	24 15	20 12	16 9	12 7	8 4	4 0	1 0					
63	100 60	95 57	89 54	84 51	79 48	74 45	69 42	54 39	49 36	45 33	41 30	37 27	33 24	29 20	25 16	21 13	17 10	13 8	10 6	6 2	2 0					
64	100 61	95 58	90 55	84 52	79 49	74 46	69 43	54 40	49 37	45 34	41 31	37 28	33 25	29 20	25 17	21 14	17 11	13 8	10 7	6 3	2 0					
65	100 62	95 59	90 56	85 53	80 50	75 47	70 44	65 41	61 38	56 35	52 32	48 29	44 26	40 23	36 20	32 17	28 14	24 12	20 9	16 6	12 3	8 0	5 0	2 0		
66	100 63	95 60	90 57	85 54	80 51	75 48	70 45	65 42	61 39	57 36	53 33	48 30	44 27	40 24	36 21	32 18	28 15	24 12	20 10	16 7	12 4	9 0	5 0	2 0		
67	100 64	95 61	90 58	85 55	80 52	75 49	71 46	66 43	62 40	58 37	54 34	49 31	45 28	41 25	37 22	33 19	29 16	25 13	21 10	17 7	13 4	10 0	6 0	3 0		
68	100 65	95 62	90 59	85 56	80 53	76 50	71 47	67 44	63 41	59 38	55 35	50 32	46 29	42 26	38 23	34 20	30 17	26 14	22 11	18 8	14 5	11 0	7 0	4 0	2 0	
69	100 66	95 63	90 60	85 57	81 54	76 51	72 48	68 45	64 42	59 39	55 36	51 33	47 30	43 27	39 24	35 21	31 18	27 15	23 12	19 9	15 6	11 3	8 0	5 0	2 0	
70	100 67	95 64	90 61	86 58	81 55	77 52	72 49	68 46	64 43	59 40	55 37	51 34	47 31	43 28	39 25	35 22	31 19	27 16	23 13	19 10	15 7	11 4	8 0	5 0	2 0	
71	100 68	95 65	90 62	86 59	81 56	77 53	73 50	68 47	64 44	59 41	55 38	51 35	47 32	43 29	39 26	35 23	31 20	27 17	23 14	19 11	15 8	11 5	8 0	5 0	2 0	
72	100 69	95 66	91 63	86 60	81 57	77 54	73 51	68 48	64 45	59 42	55 39	51 36	47 33	43 30	39 27	35 24	31 21	27 18	23 15	19 12	15 9	11 6	8 0	5 0	2 0	
73	100 70	95 67	91 64	86 61	81 58	77 55	73 52	68 49	64 46	59 43	55 40	51 37	47 34	43 31	39 28	35 25	31 22	27 19	23 16	19 13	15 10	11 7	8 0	5 0	2 0	
74	100 71	95 68	91 65	86 62	81 59	77 56	73 53	68 50	64 47	59 44	55 41	51 38	47 35	43 32	39 29	35 26	31 23	27 20	23 17	19 14	15 11	11 8	8 0	5 0	2 0	
75	100 72	96 69	91 66	86 63	81 60	77 57	73 54	68 51	64 48	59 45	55 42	51 39	47 36	43 33	39 30	35 27	31 24	27 21	23 18	19 15	15 12	11 9	8 0	5 0	2 0	
76	100 73	96 70	91 67	86 64	81 61	77 58	73 55	68 52	64 49	59 46	55 43	51 40	47 37	43 34	39 31	35 28	31 25	27 22	23 19	19 16	15 13	11 10	8 0	5 0	2 0	
77	100 74	96 71	91 68	86 65	81 62	77 59	73 56	68 53	64 50	59 47	55 44	51 41	47 38	43 35	39 32	35 29	31 26	27 23	23 20	19 17	15 14	11 11	8 0	5 0	2 0	
78	100 75	96 72	91 69	86 66	81 63	77 60	73 57	68 54	64 51	59 48	55 45	51 42	47 39	43 36	39 33	35 30	31 27	27 24	23 21	19 18	15 15	11 12	8 0	5 0	2 0	
79	100 76	96 73	91 70	86 67	81 64	77 61	73 58	68 55	64 52	59 49	55 46	51 43	47 40	43 37	39 34	35 31	31 28	27 25	23 22	19 19	15 16	11 13	8 0	5 0	2 0	
80	100 77	96 74	91 71	86 68	81 65	77 62	73 59	68 56	64 53	59 50	55 47	51 44	47 41	43 38	39 35	35 32	31 29	27 26	23 23	19 20	15 17	11 14	8 0	5 0	2 0	
81	100 78	96 75	92 72	88 69	84 66	80 63	76 60	72 57	68 54	64 51	59 48	55 45	51 42	47 39	43 36	39 33	35 30	31 27	27 24	23 21	19 18	15 15	11 16	8 0	5 0	2 0
82	100 79	96 76	92 73	88 70	84 67	80 64	76 61	72 58	68 55	64 52	59 49	55 46	51 43	47 40	43 37	39 34	35 31	31 28	27 25	23 22	19 19	15 16	11 17	8 0	5 0	2 0
83	100 80	96 77	92 74	88 71	84 68	80 65	76 62	72 59	68 56	64 53	59 50	55 47	51 44	47 41	43 38	39 35	35 32	31 29	27 26	23 23	19 20	15 17	11 18	8 0	5 0	2 0
84	100 81	96 78	92 75	88 72	84 69	80 66	76 63	72 60	68 57	64 54	59 51	55 48	51 45	47 42	43 39	39 36	35 33	31 30	27 27	23 24	19 21	15 18	11 19	8 0	5 0	2 0
85	100 82	96 79	92 76	88 73	84 70	80 67	76 64	72 61	68 58	64 55	59 52	55 49	51 46	47 43	43 40	39 37	35 34	31 31	27 28	23 25	19 22	15 19	11 20	8 0	5 0	2 0
86	100 83	96 80	92 77	88 74	84 71	80 68	76 65	72 62	68 59	64 56	59 53	55 50	51 47	47 44	43 41	39 38	35 35	31 32	27 29	23 26	19 23	15 20	11 21	8 0	5 0	2 0
87	100 84	96 81	92 78	88 75	84 72	80 69	76 66	72 63	68 60	64 57	59 54	55 51	51 48	47 45	43 42	39 39	35 36	31 33	27 30	23 27	19 24	15 21	11 22	8 0	5 0	2 0
88	100 85	96 82	92 79	88 76	84 73	80 70	76 67	72 64	68 61	64 58	59 55	55 52	51 49	47 46	43 43	39 40	35 37	31 34	27 31	23 28	19 25	15 22	11 23	8 0	5 0	2 0
89	100 86	96 83	92 80	88 77	84 74	80 71	76 68	72 65	68 62	64 59	59 56	55 52	51 50	47 47	43 44	39 41	35 38	31 35	27 32	23 29	19 26	15 23	11 24	8 0	5 0	2 0
90	100 87	96 84	92 81	88 78	84 75	80 72	76 69	72 66	68 63	64 60	59 57	55 54	51 51	47 48	43 45	39 42	35 39	31 36	27 33	23 30	19 27	15 24	11 25	8 0	5 0	2 0
91	100 88	96 85	92 82	88 79	84 76	80 73	76 70	72 67	68 64	64 61	59 58	55 55	51 52	47 49	43 46	39 43	35 40	31 37	27 34	23 31	19 28	15 25	11 26	8 0	5 0	2 0
92	100 89	96 86	92 83	88 80	84 77	80 74	76 71	72 68	68 65	64 62	59 59	55 56	51 53	47 50	43 47	39 44	35 41	31 38	27 35	23 32	19 29	15 26	11 27	8 0	5 0	2 0
93	100 90	96 87	92 84	88 81	84 78	80 75	76 72	72 69	68 66	64 63	59 60	55 57	51 54	47 51	43 48	39 45	35 42	31 39	27 36	23 33	19 30	15 27	11 28	8 0	5 0	2 0
94	100 91	96 88	92 85	88 82	84 79	80 76	76 73	72 70	68 67	64 64	59 61	55 58	51 55	47 52	43 49	39 46	35 43	31 40	27 37	23 34	19 31	15 28	11 29	8 0	5 0	2 0
95	100 92	96 89	92 86	88 83	84 80	80 77	76 74	72 71	68 68	64 65	59 62	55 59	51 56	47 53	43 50	39 47	35 44	31 41	27 38	23 35	19 32	15 29	11 30	8 0	5 0	2 0
96	100 93	96 90	92 87	88 84	84 81	80 78	76 75	72 72	68 69	64 66	59 63	55 60	51 57	47 54	43 51	39 48	35 45	31 42	27 39	23 36	19 33	15 30	11 31	8 0	5 0	2 0
97	100 94	96 91	92 88	88 85	84 82	80 79	76 76	72 73	68 70	64 67	59 64	55 61	51 58	47 55	43 52	39 49	35 46	31 43	27 40	23 37	19 34	15 31	11 32	8 0	5 0	2 0
98	100 95	96 92	92 89	88 86	84 83	80 80	76 77	72 74	68 71	64 68	59 65	55 62	51 59	47 56	43 53	39 50	35 47	31 44	27 41	23 38	19 35	15 32	11 33	8 0	5 0	2 0
99	100 96	96 93	92 90	88 87	84 84	80 81	76 78	72 75	68 72	64 69	59 66	55 63	51 60	47 57	43 54	39 51	35 48	31 45	27 42	23 39	19 36	15 33	11 34	8 0	5 0	2 0

RELATIVE HUMIDITIES IN PERCENTAGES (%)

ACTUAL HUMIDITIES IN GRAINS OF MOISTURE PER CUBIC FOOT OF AIR

RELATIVE HUMIDITIES IN PERCENTAGES (61) ACTUAL HUMIDITIES IN GRAINS OF MOISTURE PER CUBIC FOOT OF AIR

Percent cotton regain 11 10 9 8 7 6 5

## Maximum Limits of Humidity at Given Temperatures when Artificial Humidification is employed

General Laws, chapter 149, section 110, Commonwealth of Massachusetts

I Dry Bulb Thermometer Readings (Degrees Fahr.)	II Wet Bulb Thermometer Readings (Degrees Fahr.)	III Percentage of Humidity	I Dry Bulb Thermometer Readings (Degrees Fahr.)	II Wet Bulb Thermometer Readings (Degrees Fahr.)	III Percentage of Humidity
60	58	88	78	73.5	77
61	59	88	79	74.5	77.5
62	60	88	80	75.5	77.5
63	61	88	81	76	76
64	62	88	82	76.5	74
65	63	88	83	77.5	74
66	64	88	84	78	72
67	65	88	85	79	72
68	66	88	86	80	72
69	67	88	87	80.5	71
70	68	88	88	81.5	71
71	68.5	85.5	89	82.5	71
72	69	84	90	83	69
73	70	84	91	83.5	68
74	70.5	81.5	92	84.5	68
75	71.5	81.5	93	85.5	68
76	72	79	94	86	68
77	73	79	95	87	66

## Grades and Colors of the Universal Standards for American Upland Cotton

United States Department of Agriculture Circular 278

Blue- stained	Gray	Standards for Grades of Upland Cotton, White	Spotted	Yellow- tinged	Light- stained	Yellow- stained
		1 or midling fair				
		2 or strict good midling		2 T.		
<b>3 B.</b>	3 G.	3 or good midling	3 Sp.	<b>3 T.</b>	3 L. S.	<b>3 S.</b>
<b>4 B.</b>	4 G.	4 or strict midling	4 Sp.	<b>4 T.</b>	4 L. S.	<b>4 S.</b>
<b>5 B.</b>	5 G.	5 or midling	5 Sp.	<b>5 T.</b>	5 L. S.	<b>5 S.</b>
		6 or strict low midling	6 Sp.	<b>6 T.</b>		
		7 or low midling	7 Sp.	<b>7 T.</b>		
		8 or strict good ordinary				
		9 or good ordinary				

Symbols in heavy type denote grades and colors for which practical forms of the official cotton standards are prepared. Symbols in italics represent the designations of cotton which in color is between practical forms.

The grades shown above the black lines are deliverable on future contracts made in accordance with section 5 of the United States Cotton Futures Act. Those below the line are untenderable on such contracts.

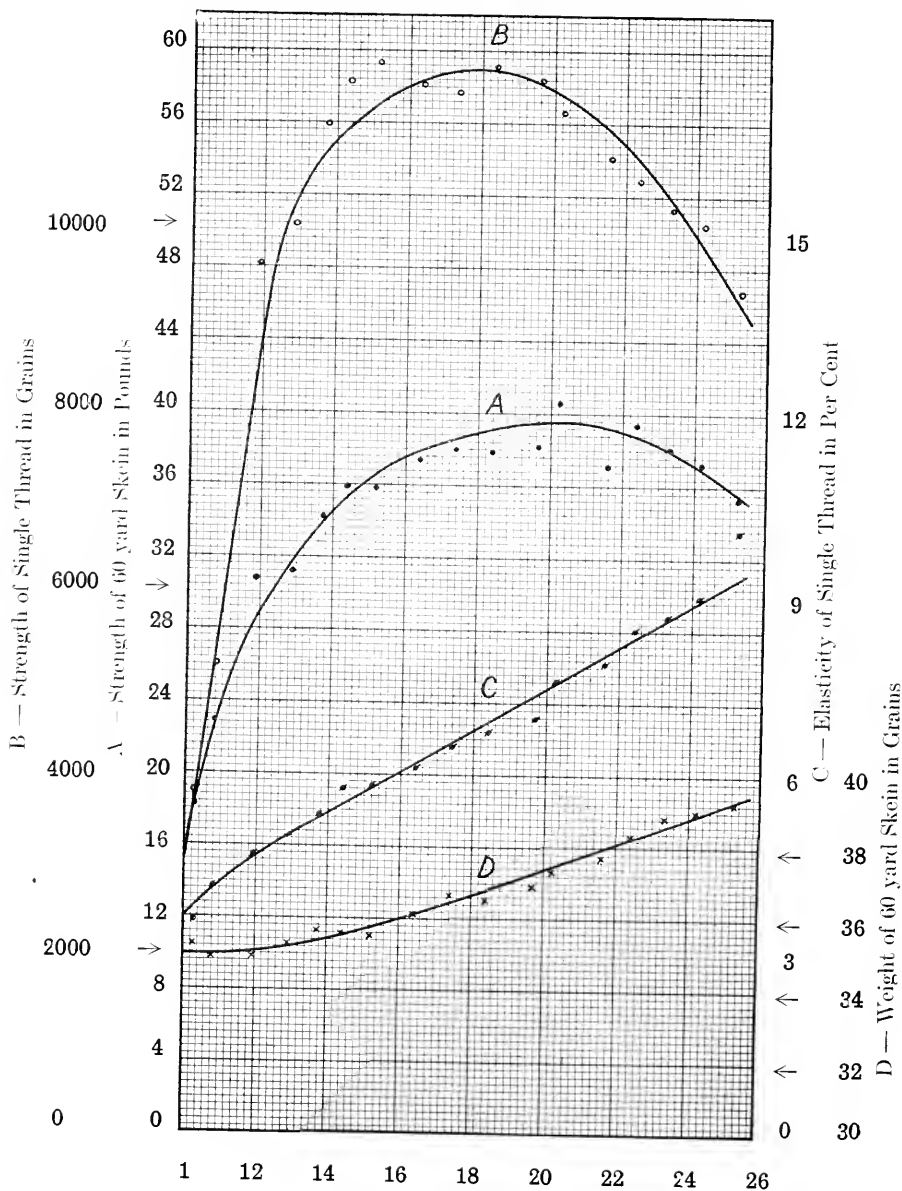
# Breaking Weights of American Yarns spun from American Cotton

By George Draper

120 Yards Weight (Grains)	Number of Yarn	OLD	NEW			120 Yards Weight (Grains)	Number of Yarn	OLD	NEW
		Breaking Weight of Warp Yarn	Breaking Weight of Warp Yarn	Breaking Weight Combed Warp	Breaking Weight Soft Twist Yarn			Breaking Weight of Warp Yarn	Breaking Weight of Combed Warp
1,000	1	—	—	—	—	19.6	51	36.6	47—
500	2	—	—	—	—	19.2	52	36.1	46
333.3	3	530	634+	863—	620+	18.9	53	35.5	45+
250	4	410	476—	646	462	18.5	54	34.9	44+
200	5	330	381	516	367	18.2	55	34.4	43+
166.7	6	275	318—	429+	304—	17.9	56	33.8	42+
142.9	7	237.6	272+	367+	258+	17.5	57	33.4	42—
125	8	209	238+	321	224+	17.2	58	32.8	41—
111.1	9	186.5	212+	285—	198+	17	59	32.3	40+
100	10	168.7	191	256	177	16.7	60	31.7	39+
90.9	11	154.1	174—	232+	160—	16.4	61	31.3	39—
83.3	12	142	159+	213—	145+	16.1	62	30.8	38—
76.9	13	131.5	147+	196	133+	15.9	63	30.4	37+
71.4	14	122.8	137—	182—	123—	15.6	64	30	37—
66.7	15	115.1	128—	169+	114—	15.4	65	29.6	36
62.5	16	108.4	120—	158+	106—	15.2	66	29.2	35+
58.8	17	102.5	113—	149—	99—	14.9	67	28.8	35—
55.6	18	97.3	107—	140+	93—	14.7	68	28.5	34+
52.6	19	92.6	101	133—	87	14.5	69	28.2	34—
50	20	88.3	96	126	82	14.3	70	27.8	33+
47.6	21	83.8	91+	120—	77+	14.1	71	27.4	33—
45.5	22	79.7	87+	114+	73+	13.9	72	27.1	32+
43.5	23	75.9	84—	109+	70—	13.7	73	26.8	32—
41.7	24	72.4	80+	104+	66+	13.5	74	26.5	31+
40	25	69.2	77	100	63	13.3	75	26.2	31—
38.5	26	66.3	74+	96	60+	13.2	76	25.8	30+
37	27	63.6	71+	92+	57+	13	77	25.5	30—
35.7	28	61.3	69—	89—	55—	12.8	78	25.3	29+
34.5	29	59.2	67—	86—	53—	12.7	79	24.9	29—
33.3	30	57.3	64+	83—	50+	12.5	80	24.6	28+
32.3	31	55.6	62+	80—	48+	12.4	81	24.3	28+
31.3	32	54	60+	77+	46+	12.2	82	24	28—
30.3	33	52.6	59—	75—	45—	12.1	83	23.7	27+
29.4	34	51.2	57—	72+	43—	11.9	84	23.4	27—
28.6	35	50	55+	70+	41+	11.8	85	23.2	27—
27.8	36	48.7	54—	68+	40—	11.6	86	22.8	26+
27	37	47.6	52+	66+	38+	11.5	87	22.6	26—
26.3	38	46.5	51	64+	37	11.4	88	22.4	26—
25.6	39	45.5	50—	63—	36—	11.2	89	22.2	25+
25	40	44.6	48+	61	34+	11.1	90	22	25—
24.4	41	43.8	47+	59+	33+	11	91	21.7	25—
23.8	42	43	46+	58—	32+	10.9	92	21.5	24+
23.3	43	42.2	45+	56+	31+	10.8	93	21.3	24—
22.7	44	41.4	44+	55+	30+	10.6	94	21.2	24—
22.2	45	40.7	43+	54—	29+	10.5	95	21	23+
21.7	46	40	42+	53—	28+	10.4	96	20.7	23+
21.3	47	39.3	41+	51+	27+	10.3	97	20.5	23—
20.8	48	38.6	41—	50+	27—	10.2	98	20.4	23—
20.4	49	37.9	40—	49+	26—	10.1	99	20.2	22+
20	50	37.3	39	48	25	10	100	20	22

# Relation of Strength and Elasticity to Twist in a 13<sup>s</sup> Yarn

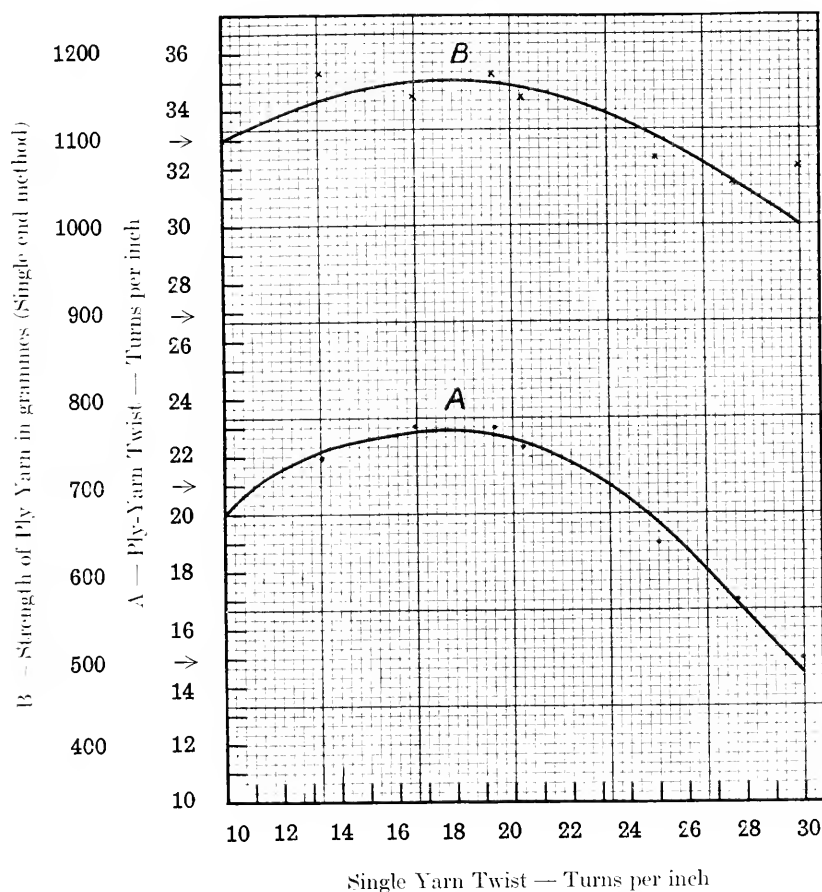
Courtesy Lowell Textile School





# Relation of a 2-Ply 13<sup>s</sup> Yarn Strength to Single and Ply Twist

Courtesy Lowell Textile School



Correction Table for Converting the Apparent Breaking Strength of 17½-Ounce Tire Fabric to a 6.5 Per Cent Regain Basis

ACTUAL BREAK	PERCENTAGE OF REGAIN TO DRY WEIGHT												
	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00
105	123.7	120.6	117.7	114.9	112.3	109.7	107.3	105.0	103.3	101.7	100.2	98.7	98.3
110	129.6	126.4	123.3	120.4	117.6	115.0	112.4	110.0	108.2	106.4	105.0	103.4	101.9
115	135.5	132.1	128.9	125.9	123.0	120.2	117.5	115.0	113.1	111.5	109.8	108.1	106.5
120	141.4	137.9	134.5	131.0	128.3	125.4	122.6	120.0	118.0	116.3	114.6	112.8	111.1
125	147.3	143.6	140.1	136.8	133.7	130.6	127.8	125.0	122.9	121.2	119.3	117.5	115.8
130	153.1	149.3	145.7	142.3	139.0	135.9	132.9	130.0	127.9	126.0	124.1	122.2	120.4
135	159.0	155.1	151.3	147.8	144.3	141.1	138.0	135.0	132.8	130.8	128.9	126.9	125.1
140	164.9	160.8	156.9	153.2	149.7	146.3	143.1	140.0	137.7	135.7	133.6	131.6	129.7
145	170.8	166.6	162.5	158.7	155.0	151.5	148.2	145.0	142.6	140.5	138.4	136.3	134.3
150	176.7	172.3	168.1	164.2	160.4	156.8	153.3	150.0	147.6	145.4	143.2	141.0	138.9
155	182.6	178.1	173.7	169.6	165.7	162.0	158.4	155.0	153.5	150.2	147.9	145.7	143.6
160	188.5	183.8	179.4	175.1	171.1	167.2	163.5	160.0	158.4	155.0	152.6	150.4	148.3
165	194.4	189.5	185.0	180.6	176.4	172.4	168.6	165.0	163.3	159.9	157.4	155.1	152.9
170	200.3	195.3	190.6	186.1	181.8	177.7	173.7	170.0	168.3	164.7	162.2	159.8	157.5
175	206.1	201.0	196.2	191.5	187.1	182.9	178.9	175.0	172.2	169.6	167.0	164.5	162.2
180	212.0	206.8	201.8	197.0	192.5	188.1	184.0	180.0	177.1	174.4	171.8	169.2	166.8
185	217.9	212.5	207.4	202.5	197.8	193.3	189.1	185.0	182.0	179.2	176.6	173.9	171.4
190	223.8	218.3	213.0	208.0	203.2	198.6	194.2	190.0	186.9	184.1	181.3	178.6	176.1
195	229.7	224.0	218.6	213.4	208.5	203.8	199.3	195.0	191.9	188.9	186.1	183.3	180.7
200	235.6	229.8	224.2	218.9	213.8	209.0	204.4	200.0	196.8	193.8	190.9	188.0	185.3
205	241.5	235.5	229.8	224.4	219.2	214.2	209.5	205.0	201.7	198.6	195.6	192.7	189.9
210	247.1	241.2	235.4	229.8	224.5	219.5	214.6	210.0	206.6	203.4	200.4	197.4	194.6
215	253.3	247.0	241.0	235.3	229.9	224.7	219.7	215.0	211.5	208.3	205.2	202.1	199.2
220	259.2	252.7	246.6	240.8	235.2	229.9	224.9	220.0	216.5	213.1	210.0	206.8	203.8
225	265.1	258.5	252.2	246.3	240.6	235.2	230.0	225.0	221.4	217.9	214.7	211.5	208.4

Correction Table for Converting the Apparent Breaking Strength of  $17\frac{1}{4}$ -Ounce Tire Fabric to a 6.5 Per Cent Regain Basis — (Continued)

ACTUAL BREAK	PERCENTAGE OF REGAIN TO DRY WEIGHT													
	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	8.50	9.00	
230	270.9	264.2	257.8	251.7	245.9	240.4	235.1	230.0	226.3	222.8	219.7	216.2	213.1	
235	276.8	270.0	263.4	257.2	251.3	245.6	240.2	235.0	231.3	227.7	224.4	220.9	217.7	
240	282.7	275.7	269.0	262.7	256.6	250.8	245.3	240.0	236.2	232.6	229.2	225.6	222.3	
245	288.6	281.4	274.6	268.1	262.0	256.1	250.4	245.0	241.2	237.4	234.0	230.3	226.9	
250	294.5	287.2	280.1	273.6	267.3	261.3	255.5	250.0	246.1	242.3	238.7	235.0	231.6	
255	300.4	292.9	285.8	279.1	272.7	266.5	260.6	255.0	251.0	247.1	243.5	239.7	236.2	
260	306.3	298.7	291.5	284.6	278.0	271.7	265.7	260.0	255.9	251.9	248.3	244.4	240.8	
265	312.1	304.4	297.1	290.0	283.4	277.0	270.8	265.0	260.8	256.8	253.0	249.1	245.5	
270	318.1	310.2	302.6	295.5	288.7	282.2	276.0	270.0	265.7	262.6	257.8	253.8	250.1	
275	323.9	315.9	308.3	301.0	294.0	287.4	281.1	275.0	270.6	266.5	262.6	258.5	254.7	
280	329.8	321.7	313.9	306.5	299.4	292.6	286.2	280.0	275.6	271.3	267.4	263.2	259.4	
285	335.7	327.4	319.5	311.9	304.7	297.9	291.3	285.0	280.5	276.1	272.1	267.9	264.0	
290	341.6	333.1	325.1	317.4	310.1	303.1	296.4	290.0	285.4	281.0	276.9	272.6	268.6	
295	347.5	338.5	330.7	322.9	315.4	308.3	301.5	295.0	290.4	285.8	281.7	277.3	273.2	
300	353.4	344.6	336.3	328.3	320.7	313.5	306.6	300.0	295.3	290.7	286.4	282.0	277.9	
305	359.3	350.4	341.9	333.8	326.1	318.8	311.7	305.0	300.2	295.5	291.2	286.7	282.5	
310	365.2	356.1	347.5	339.3	331.5	324.0	316.8	310.0	305.1	300.3	296.0	291.4	287.1	
315	371.1	361.3	353.1	344.8	336.8	329.2	321.9	315.0	310.0	305.2	300.7	296.1	291.8	
320	376.9	367.6	358.7	350.2	342.2	334.4	327.1	320.0	315.0	310.0	305.5	300.8	296.4	
325	382.8	373.3	364.3	355.7	347.5	339.7	332.2	325.0	319.9	314.9	310.3	305.5	301.0	
330	388.7	379.1	369.9	361.2	352.8	344.9	337.3	330.0	324.8	319.7	315.1	310.2	305.7	
335	394.6	384.8	375.5	366.7	358.2	350.1	342.4	335.0	329.7	324.5	319.8	314.9	310.3	
340	400.5	390.6	381.1	372.1	363.5	355.3	347.5	340.0	334.6	329.4	324.6	319.6	314.9	
345	406.4	396.3	386.7	377.6	368.9	360.6	352.6	345.0	339.6	334.2	329.4	324.3	319.5	
350	412.3	402.1	392.3	383.1	374.2	365.8	357.7	350.0	344.5	339.1	334.1	329.0	324.2	



## Analysis of Cloth for Tariff Purposes

Treasury Decisions 33823 and 34255

Under the provisions of paragraph 253 the rates of duty are to be ascertained according to the average number of the yarns in the condition in which imported. The length of the yarn is to be counted as equal to the distance covered by it in the cloth, all clipped threads to be measured as if continuous, and all ply yarns to be separated into singles and the count taken of the total singles; any excessive sizing to be removed by boiling or other suitable process. The number of the yarn is the English number of 840 yards to a pound for a No. 1 yarn.

The average number of the yarn may be found without unraveling the fabric, and is the quotient of the division of the total thread length by the weight in the proportion of 840 yards of yarn equaling 1 pound of 7,000 grains or 1 yard of yarn equaling  $8\frac{1}{3}$  grains, which is equivalent to a No. 1 yarn.

The following simple formula may be used: Multiply the count of threads per square inch by the number of square inches in the sample used, this product to be multiplied by 100; then divide the product thus obtained by the weight of the sample in grains multiplied by 432. The quotient will give the number of the yarn. For example, take a sample of cotton cloth 4 inches square, which equals 16 square inches, having 28 warp and 28 woof threads, a total of 56 threads to the square inch, and weighing 8.6 grains. The formula applied would be as follows:

$$\frac{56 \times 16 \times 100}{8.6 \times 432} = 24, \text{ the number of the yarn.}$$

The formula may be further simplified by weighing a square yard of said cloth and dividing the number of threads per square inch by  $1\frac{1}{300}$  of the weight of a square yard in grains.

Samples of all cotton cloth should be forwarded to the United States appraiser at New York on the C. V. R. cards, under the provisions of T. D. 31936. When a square yard or more is available for test the following formula may be used:

$$\frac{\text{Number of threads per square inch} \times 24}{\text{Number of ounces per square yard} \times 35} = \text{Average number of yarn.}$$

An addition of  $8\frac{1}{2}$  per cent to be made to bone-dry weight in ascertaining the number of the yarn in cotton cloth.



*Paragraph I. Passing of Title on Delivery.* — Unless otherwise specified, the title to goods sold passes to the buyer (subject to the right of stoppage *in transitu*): —

*a.* Upon delivery F. O. B. to carrier, consigned to buyer, and thereafter goods are at buyer's risk.

*b.* Upon arrival of goods at destination and delivery to buyer of bill of lading or of goods, in the case of goods to be delivered F. O. B. elsewhere than to carrier.

*c.* Upon delivery of indorsed bill of lading or of goods, in the case of goods consigned to seller's order.

*d.* Upon the separation of the goods and holding subject to buyer's order (the invoice to follow by due course of mail), in the case of goods to be held or if buyer fails to give shipping instructions.

*Paragraph II. Storage and Insurance.* — Goods invoiced and held subject to buyer's orders shall be at buyer's risk, but covered by fire insurance effected by sellers in reputable companies.

*Paragraph III. Rejections and Claims.* — The buyer cannot reject the goods for delay in delivery unless he notifies the seller within five business days from receipt of bill of lading, or of invoice if goods are to be held. When contract calls for delivery in instalments, the buyer cannot cancel the contract for any default in any one or more instalments not amounting to a substantial breach of contract, but may cancel or replace at seller's expense any delivery that is delayed.

Buyer cannot reject goods for defects in quality or other like defaults (*a*) if he cuts or converts them, nor (*b*) unless he notifies seller within ninety days from receipt by him or at finishing works of goods not held, or within ninety days after date of invoice if goods are invoiced and held; nor (*c*) unless such defects amount to a substantial breach of contract.

Loss of right to reject does not deprive the buyer of his right to claim damages, if any; but no recovery shall be had on any claim not made within one year from receipt of goods or from date of invoice if goods are held.

#### *Allowable Variations from Contract Specifications.*

*Width.* — The width shall not vary anywhere by more than  $\frac{3}{8}$  of an inch below the stipulated width, nor more than  $\frac{5}{8}$  of an inch above. The width shall not be uniformly less than the stipulated width, but must, in a majority of places in each piece, be equal to, or greater than, the stipulated width. Goods shall be measured at right angles to the selvages when laid open on a flat, horizontal surface and smoothed out by hand, but not stretched.

*Warp Count.* — Except within four inches of each selvege, (where exclusive of the selvege, the count must approximate that stipulated) the number of warp threads per inch shall not vary anywhere by more than one thread per inch below the stipulated count, nor by more than two threads per inch above. The number of threads in each piece must equal the stipulated count multiplied by the stipulated width plus the extra threads used in the selvege.

*Filling Count.* — The number of threads in the filling, or weft, shall not vary anywhere by more than three threads per inch below the stipulated count, nor by more than four above. In the case of sateens, when the count of filling exceeds the count of the warp, the allowance for variation above specified shall be increased by the same percentage that the filling count exceeds that of the warp count. In any case including sateens, the filling count per inch shall not run below the stipulated count throughout the piece, but must, in a majority of places in each piece, equal or be more than, the stipulated count.

*Weight.* — In case of controversy regarding the weight of goods, decision shall be based on goods which have been exposed for twenty-four hours to normal atmospheric conditions approximating a temperature of 70 degrees F. and a humidity of 70 per cent.





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## MEMORANDA

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1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

2. Once the problem is identified, the next step is to define the objectives and goals of the project. This helps to clarify what needs to be achieved and provides a clear direction for the team.

3. The third step is to develop a plan or strategy to address the problem. This involves breaking down the problem into smaller, manageable tasks and determining the resources needed to complete them.

4. The fourth step is to implement the plan. This involves putting the strategy into action and monitoring progress regularly to ensure that the project is on track.

5. The final step is to evaluate the results of the project. This involves assessing the outcomes against the objectives and goals and identifying any areas for improvement.

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